

PURCHASING

DECEMBER, 1941...CONTENTS

Published monthly by
CONOVER-MAST PERIODICALS, INC.
Publication Office: East Stroudsburg, Pa.

Editorial and Executive Offices:
205 East 42nd Street, New York, N. Y.

HARVEY CONOVER..President and
Treasurer
B. P. MAST Vice-President
HARTLEY W. BARCLAY ..Secretary
STUART F. HEINRITZEditor
A. M. MORSE, Jr. Business Manager

Western Manager

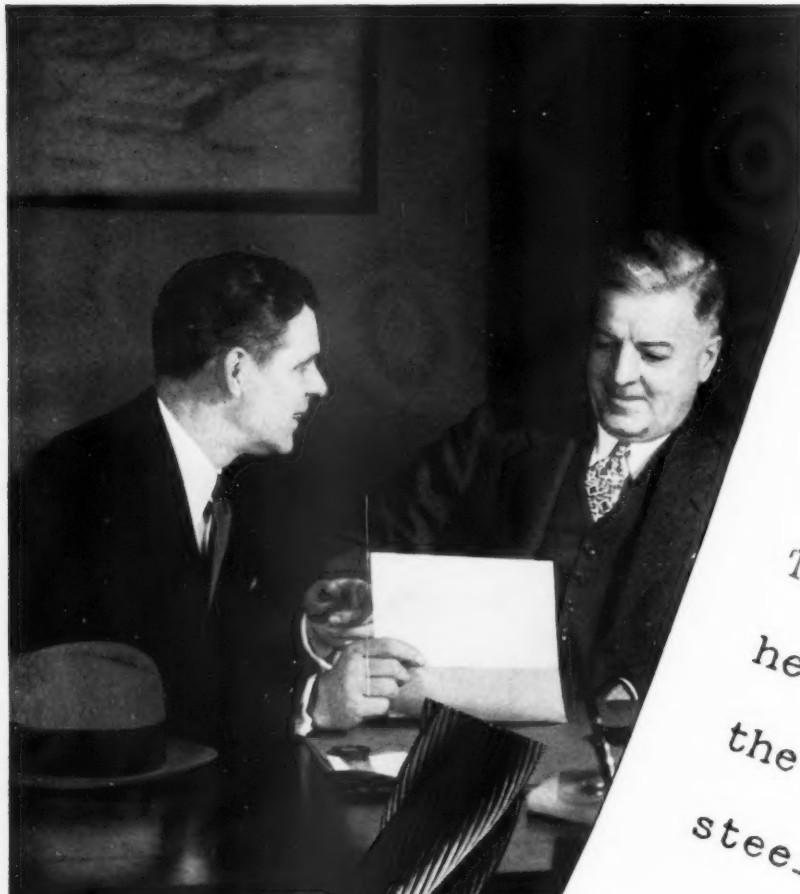
Stanley J. Smith
333 N. Michigan Ave., Chicago

Advertising Representatives:

Joseph Mehr, 205 East 42nd St.
New York
Richard C. Grove, Leader Building
Cleveland

More Changes Ahead	33
Army Specifications Are Being Revised	35
The Handwriting on the Wall	40
Charles Ford	
How Rust Craft Buys	43
Stuart F. Heinritz	
Maximum Prices Established by O. P. A.	49
A detailed summary of forty-two orders issued by the Office of Price Administration, controlling the markets for industrial materials.	
Streamlined System for Paint Distribution	64
Pen-Points on Purchase Law	66
H. H. Shively	
Dictating Machines Save Time	111
E. L. Cady	
Light Weight Index Card	118
MONTHLY FEATURES	
Yours on Request	10
F. O. B.	20
New Products—Ideas	68
Personalities in the News	102
Business Machines and Stationery Stores	111
Among the Associations	120
Index to Advertisers	160

PURCHASING is an independent journal not the official organ of any association. It is the only publication of national scope devoted exclusively to the interests and problems of the purchasing executive in industry and government. Established 1915 as "The Purchasing Agent." Consolidated with "The Executive Purchaser." VOLUME XI, NUMBER 6. 35c per copy, \$3.00 per year. Extra postage for Canadian and foreign subscriptions \$1.00 a year. Contents are indexed weekly and annually by the Engineering Index Service. Copyright 1941 by Conover-Mast Periodicals, Inc., in the U.S.A.



"... and Wire Rope Service Records also prove that TRU-LAY Preformed helps conserve the nation's steel supply. . . ."

"Yes sir—practically every user who keeps the same sort of performance records on his wire rope that he does on his motor trucks, man hours, etc.—is sold on TRU-LAY Preformed. He knows, from his own records, that TRU-LAY far outlasts ordinary non-preformed. He knows that it repays its slight premium cost over and over again in easier, safer handling, faster reeving; better spooling—longer service." • American Cable engineers encourage the keeping of rope performance records. . . . For two reasons: first, they tell the user exactly what rope construction is best suited for his job; second, for the selfish reason that performance records make repeat orders for TRU-LAY Preformed automatic. . . . Write today for a supply of WIRE ROPE SERVICE RECORD FORMS. They are free. Their use will help increase production and lower costs. They are free of cost and obligation—and may be used with any type or make of wire rope. Prove to yourself that American Cable TRU-LAY Preformed is even better than we say it is.

AMERICAN CABLE DIVISION • WILKES-BARRE • PENNSYLVANIA

District Offices: Atlanta, Chicago, Detroit, Denver, Los Angeles, New York, Philadelphia, Pittsburgh, Houston, San Francisco

*In Business
for Your Safety*

WIRE ROPE SERVICE RECORD		
Rated at	Line No.	Page
Date Installed	Date Cut	
Length Used		
Rated at	Line No.	Page
Date Installed	Date Cut	
Length Used		
Rated at	Line No.	Page
Date Installed	Date Cut	
Length Used		

AMERICAN CHAIN & CABLE COMPANY, Inc.



ESSENTIAL PRODUCTS . . . AMERICAN CABLE Wire Rope, TRU-STOP Emergency Brakes, TRU-LAY Control Cables, AMERICAN Chain,
WEED Tire Chains, ACCO Malleable Iron Castings, CAMPBELL Cutting Machines, FORD Hoists and Trolleys, HAZARD Wire Rope,
Yacht Rigging, Aircraft Control Cables, MANLEY Auto Service Equipment, OWEN Springs, PAGE Fence, Shaped Wire, Welding Wire,
READING-PRATT & CADY Valves, READING Electric Steel Castings, WRIGHT Hoists, Cranes, Presses . . . *In Business for Your Safety*

When writing American Chain & Cable Company please mention Purchasing

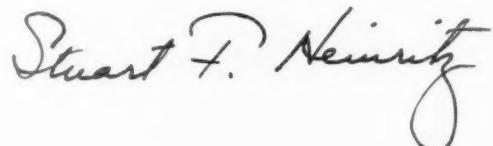
MORE CHANGES AHEAD!

A review of 1941 from the business and industrial viewpoint is a chronicle of startling change, that has completely altered former objectives, former measures of value, and former methods of doing business. Purchasing men have been so close to this development, so absorbed in adjusting their policies and procedures to the new order, that it is difficult to appreciate just how rapidly it has come about. It seems as though we have been living with priorities for a long, long time, and the initials O.P.M. are as familiar to every business man as his own.

But on January 1, 1941, there was no O.P.M. There were no mandatory priorities, no price ceilings, no limitation orders, no allocations. Purchasing departments were busy, and some materials were getting hard to buy. But purchasing executives were thinking in terms of better follow-up, rather than in terms of the special priorities sections that are now very generally a part of purchasing organization. They were exploring the possibilities of finding a substitute here or there, whereas today the problem may be one of complete plant conversion to adapt the industry and its product to the needs of the defense program.

All this has come about in 1941. If there are any lessons to be drawn from this year's experience, they are: (1) Get ready for even greater changes ahead! The defense program is gaining daily in magnitude, momentum, and urgency. The problems are getting bigger, requiring new and better controls, and these controls are even now in the making. (2) The job as a whole will be done better, and the individual company's position in the program will be more advantageous, as industry and government work together.

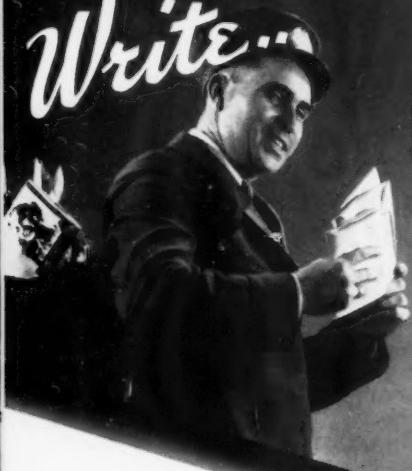
The year ahead will be a critical period as American industry is put to its greatest test. One of the most potent factors in meeting that test successfully will be alert, informed, and resourceful purchasing, attuned to the new rules and directed toward national objectives.



Phone...

Wire...

Write...



WORDS *that quickly turn to STEEL*

SUBMIT your steel requirements to this experienced, highly-specialized source. Telephone, wire, or write—however you communicate, you'll get action and effective co-operation.

If you phone, experienced operators connect you, *without waiting*, with a Ryerson steel man, a man who talks *your language*. Wires are received by teletype, direct from central telegraph offices. Mail is picked up hourly at the post office, a *faster service* than special delivery.

In almost a matter of minutes, your words have be-

come steel—steel that is on its way back to serve you.

Rapid handling of incoming orders is typical of Ryerson service in *every department*. It matches large and varied Ryerson stocks and Ryerson Certified Quality—an unequalled service to American Industry. Because many sizes are low or even missing, "Open orders" are advisable during the emergency. Stock list sent promptly on request.

Joseph T. Ryerson & Son, Inc., Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

RYERSON *Certified* **STEELS**



**The War Department's
procurement program
is keyed to emergency
conditions and sets the
pace in conserving
scarce materials.**

Photos by U. S. Army Signal Corps

**The Quartermaster General
Major General E. B. Gregory**



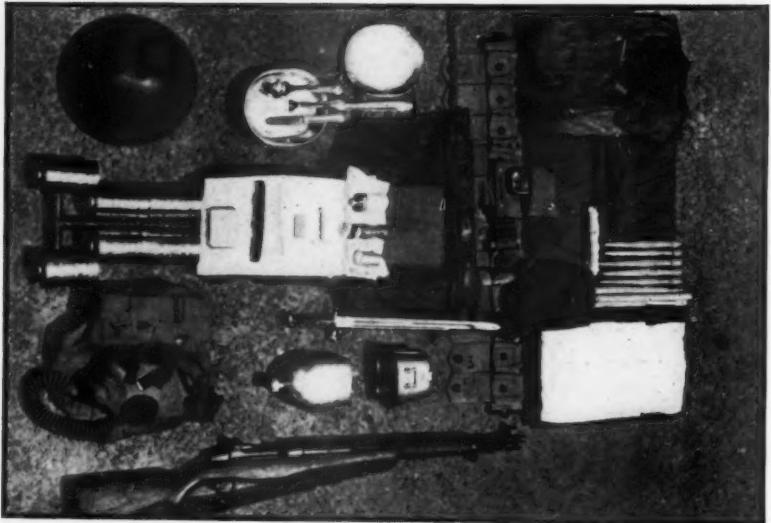
ARMY SPECIFICATIONS ARE BEING REVISED

IT IS entirely fitting that in our present defense economy the Army and Navy should have first call on materials. Where scarcity and shortage exist, or are threatened, industry and the consumer are asked to make sacrifices in the way of conserving supplies of the scarce materials, doing without some things in order that they may be applied to the essential uses of defense, and seeking out substitutes that will serve the purpose by utilizing materials which are more readily available. That request is made with a full realization of all that it entails. This realization is the more acute because the Army is practising what it preaches, and is systematically revising its own specifications to meet the situation most effectively. The Army knows, at first hand, the problems of substitution and conservation, and it knows what can be accomplished in the cumulative effect of many small savings and adjustments.

The Army's substitution list compares favorably with that of most industrial organizations, despite the fact that a primary object of the entire national materials program has been to release, for the use of the armed services, supplies which have been found par-

ticularly adapted to these requirements. Aluminum, for example, aside from its basic importance in aircraft manufacture, where no suitable substitute has yet been developed, has been a favored material for commissary and laundry equipment, and for field equipment where the saving of every possible ounce of weight is important to the comfort, mobility and efficiency of the soldier. For months past, no purchases have been made of garrison equipment requiring the use of aluminum. Substitution of less vital materials for aluminum have been made in more than thirty separate supplies. Tinned steel cooking utensils are replacing aluminum equipment in Army kitchens. Galvanized iron is being used in laundry equipment. Aluminum has been replaced by non-metallic materials for table tops, by wood and steel in chairs, and by mirror glass in reflectors. Efforts are also being made to find or develop suitable substitutes in field equipment where such new materials will not adversely affect the military characteristics of the product.

On twenty-two major items calling for the use of rubber, substitutes have been found to eliminate this critical material in four cases, and the amount of



With the exception of the gas mask, helmet and rifle, all of the soldier's equipment pictured here for inspection was furnished by the Quartermaster Corps.



This mobile kitchen with gasoline range is one of the Quartermaster Corps' contributions to the mechanized army.

Incidentally, this is regarded primarily as a procurement project and not as a matter of salvage, and it is definitely related, in Army thinking, with the commercial facilities available for such reconditioning. This purchasing survey disclosed some 4,500 commercial establishments in the United States equipped to do the work and in a position to bid on it. As a secondary step, the Quartermaster research staff is studying the situation with respect to buying equipment for the recapping operation, for outlying Army bases.

Substitutes for Silk and Copper

In seventeen Army supplies containing silk, this critical material has been eliminated from fourteen items. No detail has been too small to receive due consideration. Many of the sewing and stitching operations on thousands of garments manufactured for the Army formerly specified the use of silk thread. That has now been replaced by mercerized cotton thread.

Similarly, copper has been replaced in specifications by such materials as porcelain, glass, black iron, lead, galvanized iron and corrosion-resisting steel. Nickel has been replaced by molybdenum, wood, vitrified clay, cast iron, galvanized iron, steel, and glass. Malleable iron and steel have been substituted for brass and bronze in 96 items of equipment manufactured by the thousands for Army use, including belt buckles, rifle scabbard snaps, nuts, bolts and electrical fixtures. The list could be extended at great length, for quantities of critical defense materials have been eliminated or reduced in the specifications for more than three hundred different pieces of equipment purchased by the Quartermaster Corps alone, and new specifications have been drawn up for as many more items, to take effect on manufacturing orders after supplies on hand have been used.

Research in Plastics

Plastics, which have been extensively used as substitute materials in private industry, have also received the serious attention of Army procurement agencies—to the extent that a Plastic Technical Unit was recently added to the Supply Division of the Quartermaster Corps. Both the Quartermaster Corps and the Ordnance Department, the Army's two largest purchasing agencies, are cooperating with civilian research

rubber has been sharply reduced in the other eighteen pieces of equipment. Characteristic of the efforts made in this direction is the test recently made at the Holabird Quartermaster Depot, Baltimore, where recapped and retreaded tires were run on a 9,000 mile convoy. The result of this experiment point the way to conservation of approximately 50% of the rubber normally used for tires on Army vehicles. It was demonstrated that recapped tires would give satisfactory service up to about 80% of the normal service from an original tread, at a reconditioning cost of about 40% of the price of a new tire. Another factor considered in this particular investigation was the fact that capping material for a standard 750-20 tire, widely used on the 1½ and 2½ ton Army trucks, requires only 0.8 of a cubic foot of cargo space, whereas the tire itself requires 4.7 cubic feet. At this rate the Army could ship enough material to restore six tires for further use in the same space that would be required for one new tire.

Seeking substitutes does not imply any laxity in basic standards. A laboratory man at the Philadelphia Quartermaster Depot tests uniform cloth to determine its water-repellant qualities.

Tires to "keep 'em rolling" are stocked at the Emeryville (Cal.) Quartermaster Depot.



experts in this field. Some of the accepted applications, now embodied in specifications of various Army departments, include: (Ordnance) false windshields for armor piercing shells, bodies of bond fuzes, fins for mortar shells; (Quartermaster) truck parts, knife handles, combs, buttons, inkwells, liners for steel helmets; (Air Corps) windows, noses, hatch covers, tail empennages, gunners' turrets, landing light covers; (Signal Corps) telephone parts, switchboards, dynamos, radio compasses, microphones and other instruments; (Chemical Warfare Service) lenses for gas masks.

New Finishes Are Adopted

Finishing materials and processes have been studied for the possibility of replacing critical materials. An example of this type of substitution is the Army's new 5-gallon gasoline can. Instead of being galvanized with zinc, these cans are now coated inside with a clear, high-baked synthetic lacquer resistant to gasoline and water. The outside is painted with olive drab lusterless enamel. The new treatment has been found entirely satisfactory, and in addition to saving a considerable quantity of vitally important zinc, it has reduced both weight and cost for this item.

In procurement of paper, many changes in specifications have been made in order to avoid congestion in the industry and to permit a wider distribution of the business. For example, the specifications for mimeograph paper were rewritten and broadened so that at the present time all pulp paper mills can meet the Army requirements. Revised specifications for duplicating stencils not only spread the contract over three manufacturers instead of the previous one supplier, but resulted in prices which produced a six-months saving of more than \$200,000 as compared with the previous six-month period. White and canary memo pads have been combined, with present purchases being of white pads only. This avoids the necessity of carrying a stock of both types, and also permits the purchase of lower priced paper.

Industrial Methods Are Used

A constant review of specifications is in process in the Standardization Branch of the Quartermaster Corps, located in the Railroad Retirement Building, just across the street from OPM headquarters. There, by the way, the staff includes a number of practical



industrial purchasing men, reserve officers whose knowledge of materials, specifications, and buying is now being effectively used to adapt Army buying regulations to the needs and conditions of the times.

Their function and method of procedure closely follows the practice of industrial purchasing executives engaged on a similar project. Each officer is a specialist on some particular group of materials or some phase of the purchase. Their recommendations may affect the materials going into a product, the details of design or manufacture, the methods of packing for shipment, or any other factor. Their problem concerns, first of all, the use of the item and its suitability for that use; secondly, the practical availability of the component materials and the present necessity of utilizing the materials most readily available, without diminishing the service qualities of the product; thirdly, such considerations as cost, conservation, and coordination with the general defense and economic program.

An Army specification covers a particular item of equipment, such as a cartridge belt, a gas grenade bandoleer, a field kitchen, or packing instructions for canned goods. It embraces, by reference, basic Federal Specifications or U. S. Army Specifications for the textiles, metal parts, etc., which go into the completed product, and design and dimensional data established by the particular branch of the service responsible for its procurement.

One of the important objectives of the Standardization Branch in its present program is to broaden these specifications so as to permit the use of alternative materials for one or more of the component parts. These substitutions themselves may be defined by an existing Federal or Army specification but may not have been previously used for this particular application. Consequently an important new section is being written into many of the new or revised specifications, setting forth acceptable substitutions which may be made with the approval of the Quartermaster General or the contracting officer when bids are submitted on the item.

An Example of Substitution

A typical example of this process is found in a specification covering a gas-grenade bandoleer, M-1936. Two of the six mimeographed pages setting forth the requirements in respect to this item are devoted to possible substitutions. With the approval of the contracting officer, seven of the hardware items—buckle, fastener support, end clips, snap fastener, eyelets, washer, and belt rivets—which are specified for brass, bronze finish, may be substituted by brass, oxidized finish; and in the event that extended storage of the item is not intended, the prescribed packing in steel-bound wooden cases may be substituted by cleated fiberboard, wirebound wood, corrugated or solid fiber.

With the approval of The Quartermaster General, the latitude is considerably wider. There are four possible substitutions for the brass buckle—malleable

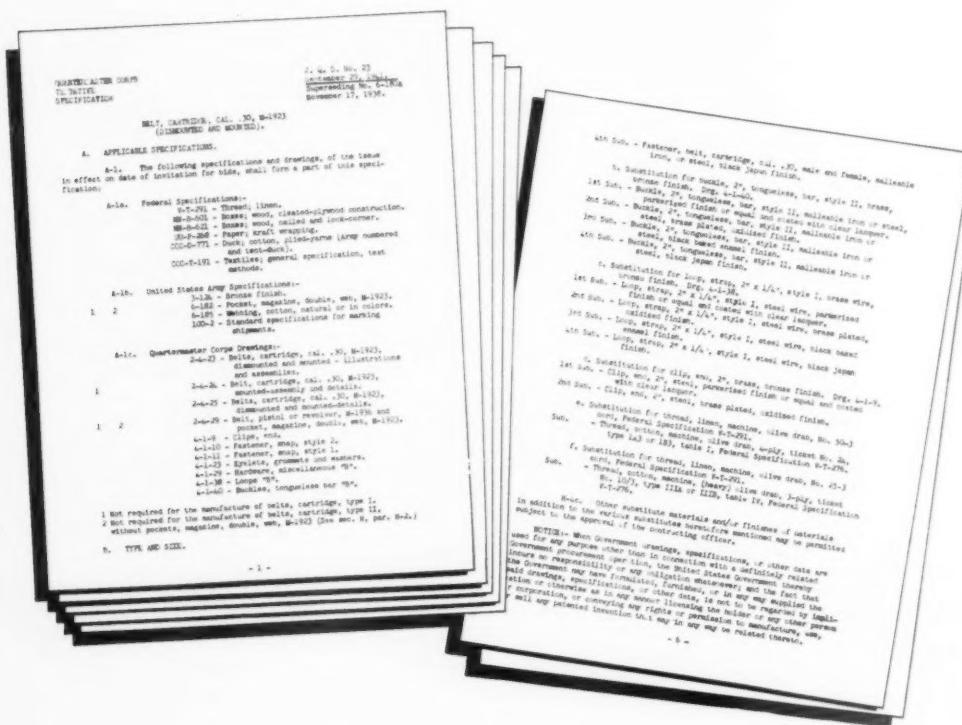
iron or steel (1) Parkerized and coated with clear lacquer, (2) brass or copper plated, oxidized finish, (3) malleable iron or steel, Parkerized with black baked enamel finish, or (4) with black japan finish. For the fastener support, there are four similar substitutions permitted, using 0.0299" steel sheet or strip in place of the 0.0319" brass; the substitution in this case comes within an existing Army specification. Linen thread may be replaced with heavy cotton machine thread, 3-ply, which is defined in a Federal specification, as is the material which it may replace.

Thus, within the scope of established governmental standards which provide the basis for quality control without disturbing any present procedure, the Army has recast its own requirement by broadening the range of acceptable component parts of a specified item, thereby releasing a claim on scarce brass, steel strapping, and linen which would otherwise automatically have a high preference rating by virtue of being on an order from an Army department. In this particular case, the individual quantities are small; but the cumulative quantity is considerable, and the principle or policy which it illustrates is significant and far reaching. Scores of similar examples could be cited.

How New Standards Are Established

The process of making such a revision in specifications is one of careful study and experiment. The Standardization Branch of the Quartermaster Corps, for example, is constantly reviewing existing specifications, seeking possibilities for effecting such improvements. The personnel of this section brings to the work specialized knowledge of materials and experience in both industrial and military affairs. Suggestions are welcomed from users of the equipment and from industrial suppliers, and all are given thorough consideration.

Before being incorporated in a new or revised specification, the proposed changes are tested in the field, for satisfactory performance in service is the first objective. When approval has been secured from



Quartermaster Corps
purchasing is done on
the basis of very exact
specifications, but an
important part of every
specification today is a
section showing ac-
ceptable substitutes
which will help to con-
serve essential mate-
rials.

GENERAL SPECIFICATIONS FOR PACKING CANNED GOODS (SUBSISTENCE) FOR OVERSEAS SHIPMENT (BOXES, STRAPPING, AND MARKING)



Packing canned rations for shipment to maneuvers. Packaging methods are specified in detail for Army orders.

B. TYPE AND STYLE

B-1. Type—Unless otherwise specified in invitation for bids, contract, or order, canned goods for overseas shipment shall be packed in new boxes, conforming to requirements contained herein.

B-2. Style—Unless otherwise specified in invitation for bids, contract, or order, the boxes used in packing shipments shall be of any of the following:

Style 1	Federal Specification LLL-B-631
Style A	Federal Specification LLL-B-636
Style 1	Federal Specification NN-B-621
Style 2 or 3	Federal Specification NN-B-631

B-2a. The flaps of corrugated and solid fiber boxes shall be of such length, top and bottom, that all meet in the center.

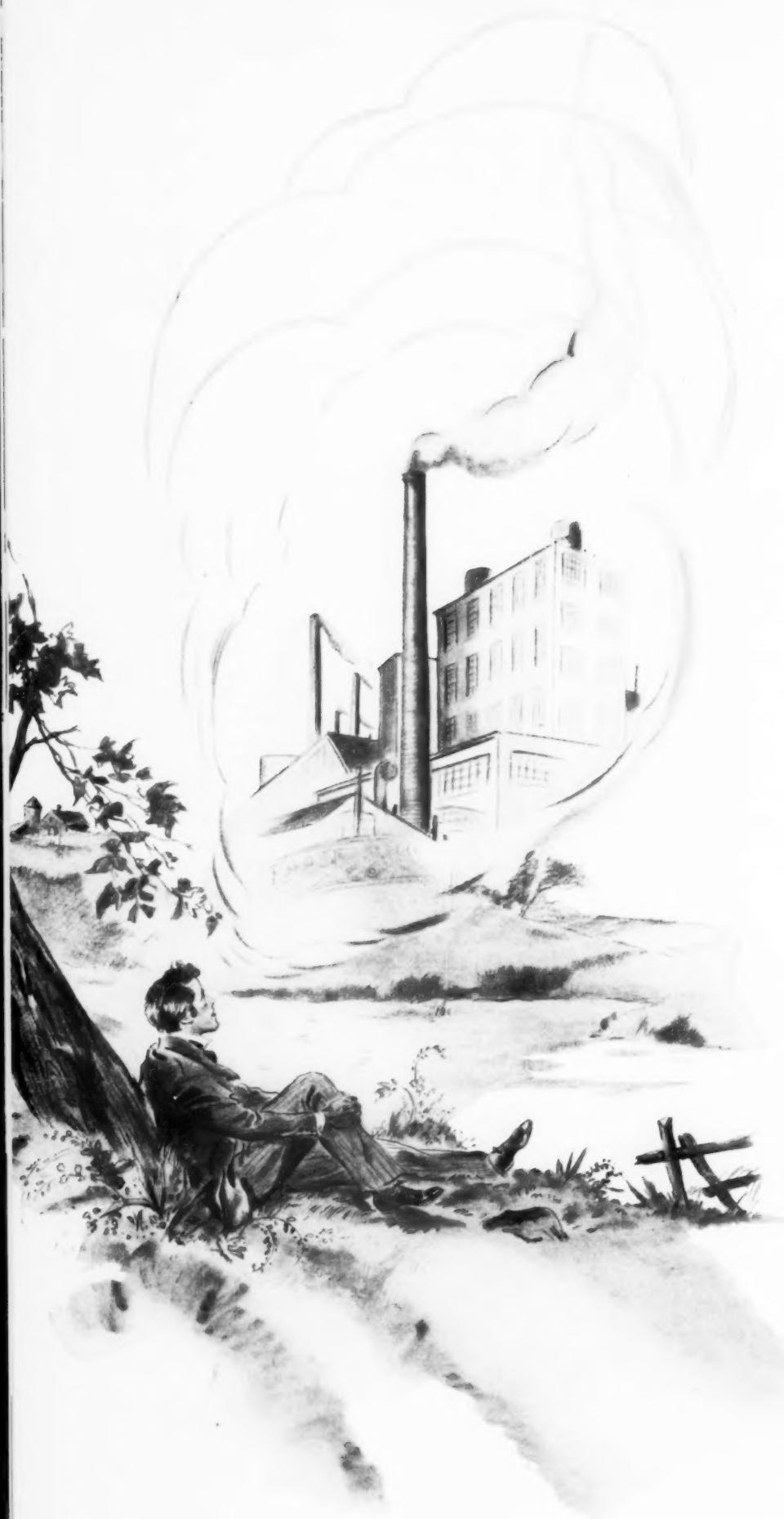
users of the equipment and from the procurement officers responsible for getting the Army material, the revision is embodied in a tentative Quartermaster Corps specification, which is issued to the procurement officers at Quartermaster Depots concerned with the item. Before it becomes an official U. S. Army specification, the approval of other branches of the service is required. This procedure takes time, but the results are already apparent. For instance, the example cited above has attained the status of an Army specification, recently accepted and replacing the earlier specification adopted in 1937, when conditions in the material markets were far different from the present situation. Incidentally, this time factor is being rapidly reduced as the various branches are working more closely together and as the basic work progresses. The changes made in this instance, affecting details of hardware, textiles and packing methods, are applicable to dozens of comparable items; trial and approval of

those further applications will be expedited by the experience gained in the first instance.

The Plan is Getting Results

The importance of this program to the industrial purchasing executive is two-fold. It suggests a procedure that is getting results and that may be profitably adapted to the problems of any purchasing department facing the necessity of finding substitutes or alternatives for scarce materials going into their company's product. Secondly, it proves that in Army purchasing, right at the point which the entire defense program is designed to serve, there is a conscientious and effective policy of cooperation. Army buyers themselves are doing just what they are asking of industry, putting first things first and considering the primary objectives of ultimate service above the dictates of usage and precedent.

The



WITHOUT naming no names, and, as the story writers put it, without reference to any living person, here's a yarn:

Back in the gay '70's, or maybe '80's, (I never was much good on dates) there was a little paper mill, lineally descended from the old days of hand paper making, but well advanced in the use of machinery. It was owned and operated by the same old craftsman who started his career dipping a hand mould. He was good; if pressed he probably would have admitted that himself, but, anyhow, he was good. He made good paper, made a little money as he went along, and the business grew.

This man had a son. He gave the young fellow a good education and took him into the business to learn it from the ground up. I hope to tell you the young fellow made good; he wasn't brash about it, but he could give the old man cards and spades.

One day, in overalls all spotted with wet pulp, he walked into the old man's office and said: "The Mill Farm is on the market to settle the estate. We ought to buy it."

"Wotinell ought we to buy it for?" queried the old man.

"To control the spring," rejoined the son.

That spring was a beautiful piece of work. A basin maybe sixty feet across, with the water bubbling up from a fine white sand bottom; just below the outlet was a little fall built up with a dam, and the crystal water turned an old overshot wheel, grinding grist for the nearby farmers, then flowing along to tumble into the river above the mill. The water was pure, clean, abundant, and just what the doctor would have ordered for fine paper-making.

But the old man wasn't interested. "What the devil do we want of that spring?" he asked. "Haven't we got the river flowing right by the door; d'ye think that's going to dry up and leave us inland?"

Handwriting on the Wall

By CHARLES FORD

"No; but the way population is coming up this valley, before long the river won't be a damn bit better than a sewer, and the water won't be fit for paper making."

"Look here," responded the paternal ancestor, "you get back into the mill and leave such matters to me. We'll go right on making paper with that river water longer than either of us will live."

"But, father," was the serious reply, "I can see some traces of water pollution already; and if we don't look after our water supply, somebody around here is going to get his tail in a crack with the door shut on it."

But the old man was obdurate. He wouldn't listen. Finally he told the young man to go buy the spring himself if he was so damned anxious about it.

Sonny was game. He didn't propose to sit by and see some one else gobble that spring, feeling sure that the mill would need it before long. And if some one owned the spring and found out the mill had to have it,—wow!

He went back into the mill pondering over ways and means. He knew the executor of the estate pretty well, and walked into his office a few days later with a certified check for a thousand simoleons in his pocket. He came out minus the check, plus a sixty-day option to buy the whole farm. During that sixty days he scraped together all the money he had saved, plus a few thousand for which he stuck up a friendly uncle, threw a magnificent bluff at the executor, and found himself with a farm, a spring, an old grist mill and a lot of variegated and miscellaneous junk, to say nothing of a mortgage that made his head reel when he thought of it.

But he carried on, wrecked the old mill, peddled the junk, sold off a few jagged corners of the land that weren't needed; and managed to reduce the mortgage so he could carry it and lie low. He managed to keep the transaction quiet, but he was short of cigar money for a long time.

It was a pretty long wait. The river water grew thicker and thicker, and dirtier and dirtier. For a while the filters took care of the water, then the paper began to suffer. Just about that time the old gentleman was gathered to his ancestors; and it wasn't long before a gang of men started laying a pipe line from the spring to the mill.

The old gentleman had passed on, and the ancient filters went to the junk-heap. The spring flowed, and supplied the mill, and the young man, now become in his turn the old gentleman, hung on to the spring as his own personal property. On fine days he would walk up to it, sit in the shade and watch it, and do his thinking. When at last he retired, and the mill passed into other hands, the spring didn't pass. The water con-

tinued to flow into the mill, but the new corporation had taken a ninety-nine year lease for enough jack so that at least during that time what was left of the family wouldn't need to worry about wolves in the front yard.

Every association of Purchasing Agents is made up of four kinds of guys. One kind doesn't think at all; a second does its thinking after the fact; a third thinks of what is put before him. The fourth, rarest of birds in the purchasing or any other game, gets in a lot of his thinking before the time comes to use it.

The handwriting is on the wall to be read by those who ponder it. It may be in Arabic or Arapahoe, in black paint, luminous paint, or invisible. But it's there. They say that when the Franco-Prussian war was declared, old Moltke lit another cigar and reached into a filing case. There was the whole plan of campaign figured out to a decimal, with Little Napoleon in the doghouse at the end of it. The old fox had merely to press a button.

"Sufficient unto the day are the requisitions thereof" is no motto for any purchasing officer. It isn't enough to sweep up one's desk with celerity. Nine-tenths of the stuff that goes over a purchasing desk can be handled just as well by assistants, and, as a matter of fact, ought to be. If you don't train assistants to act, where are the Purchasing Agents of the future? A first class Purchasing Agent shouldn't do a darned thing he can get a subordinate to do—right. These young fellows are there to learn their business by sweeping up the small stuff, and absorbing wisdom at the feet of their boss. And the boss, if he damned well knows his business, will see that they are doing just that. Suppose his arteries, under the pressure of purchasing and profanity, happen to give way? The Big Boss might have to step out and hire a successor who will not prove such a regular guy.

Maybe you have, in your time, attended a criminal trial, and wondered how a lawyer, in cross-examination, can possibly show so much medical knowledge that he will ball up doctors who have given their lives to the practice of medicine? By the time that lawyer has scraped his vest-buttons against a bar for his next drink, he's probably forgotten all about it. He had simply crammed for the occasion. That's what a Purchasing Agent has to do very often. He must meet skilled professionals on their own ground—engineers, chemists, builders, merchants, manufacturers, and keep three hops and a jump ahead of them to keep from being found out.

A Purchasing Agent can't know as much about motors or casein or sodium sulphate or the satellites of Jupiter as the birds who specialize in these things. But give a first class purchasing guy a requisition for

Continued on page 147



"This is merely a demonstration sample, General,

to give you an idea of our product."



HOW RUST CRAFT BUYS

By STUART F. HEINRITZ



The greeting card business, which occupies a pleasant and important place in our national life today, has its roots in Victorian England, almost a century ago. Cards were produced in America by Louis Prang as early as 1874. But from a commercial standpoint, the industry is a relatively recent development. The "modern era" of greeting card publication in this country had its origins not more than thirty-five years ago, when this activity progressed from an occasional, side-line, and highly individual enterprise to planned schedules of creation and production demanding the attention of full-time organizations and administration to develop the product and the market. The period which has brought this vocation to its present status of a solid, active and significant factor in industry, utilizing the best resources of the creative and graphic arts, the technique of large scale production and national distribution to serve a steadily increasing public acceptance and use of its product—this latter phase covers only the span of the last two decades.

The history of Rust Craft Publishers, Inc., of Boston, typifies the growth and progress of the field as a whole. In 1906, Fred Rust opened a little bookshop in the upstairs room of a Kansas City business block.

One of his early business experiments was the printing of a "Christmas letter"—a severely plain little tan folder, its only embellishment a red capital initial, but gracefully expressing a message and a wish appropriate to this "great-granddaddy of all holiday seasons."

Customers were enthusiastic, and Mr. Rust was encouraged by the success of this first venture to undertake a somewhat broader publishing program. Within two years, his line had been extended to a list of more than thirty items, including New Year's and birthday greetings in addition to the Christmas numbers. His brother Donald joined him to look after the details of manufacturing. In 1908 they made the first definite attempt to secure country-wide distribution, as the two brothers carried the line to dealers from Boston to San Francisco, one taking to the road while the other kept the store and plant running. Business volume increased to the point where, in 1910, an important decision was made. The retail store was discontinued, and the business was committed wholly to the greeting card phase. The firm, now taking the name of Rust Craft Publishers, moved to Boston and set up shop in modest quarters which have long since been outgrown.

The industry itself has progressed substantially in this period. Founded essentially on a highly seasonal product and appeal, it has diversified its products, developed its markets and arranged its production schedules to attain an evenness of operation which is the envy of many more staple lines of industry. Though it is decidedly competitive, there has been unity of purpose in promoting the fundamental objectives of



W. S. RANDALL
Purchasing Agent

DONALD HOLBROOK
Assistant Purchasing Agent



the industry as a whole, and the educational programs to the public and to the dealers have been intelligent, constructive, and effective in broadening distribution.

Though it depends first of all upon that unpredictable and temperamental factor—the creative artist, the industry has been among the leaders in applying new technical methods and equipment. (Rust Craft prides itself, among other things, on being Licensee No. 1 for the Jean Berte water color printing process.) Planning and working months ahead for the calendar holidays, it is alert and flexible to the conditions and interests of the current day. Greeting cards specifically designed for the selective service trainees were ready before the cantonments, and another timely and attractive folder is doing national service in promoting the sale of Defense Saving Stamps.

Periods of depression have helped rather than hindered this business as cards were used in place of more expensive gifts that would otherwise have been sent. And this is not a temporary expedient, for the cards filled a need and truly expressed the spirit of the occasion. Those gains in public favor have been effectually consolidated.

There have been important milestones in the progress of Rust Craft Publishers as the company grew with the industry. In 1921, Ernest Dudley Chase merged his publishing business with that of the Rust brothers, and became an associate in charge of creation and advertising. In 1924, Charles West, President of the Campbell Art Company, came to Boston as general manager and sales manager. In 1935, another of the pioneering firms—A. M. Davis & Company—went out of the greeting card field, and their outstanding collection of sentiments was added to the Rust Craft resources.

A picture of the company's activities today presents a striking contrast to the tentative beginnings of an industry in an upstairs Kansas City room only thirty-five years ago. Here is a busy, vital organization with a thousand employees in twenty-one departments, occupying seven full floors of a large modern building. Here are skilled artists and craftsmen, carrying on every process concerned with the conception and production of modern greeting cards, at the rate of seventy million cards, in thirty-three hundred separate numbers, in the course of a year. Here is the nerve center of a distribution system that reaches out through six

thousand dealers in every part of the country. Here, also, is modern progressive management at work in all its phases—including a compact and efficient purchasing department.

Purchasing Is Centralized

The policy of centralized purchasing was adopted in 1927, and somewhat on the spur of the moment. Though the rapidly increasing size and complexity of the business had for some time indicated the need for more positive materials control, and purchases were attaining significant proportions, demanding the attention of various executives throughout the organization, no one had the time to give the problem thorough consideration. Then one day a representative of the Liberty Mutual Insurance Company called to make a periodic inspection of the premises. He did not treat it as a routine affair, nor merely as an opportunity to sell additional insurance, but made a few practical and common-sense suggestions on how conditions might be improved. He was not only a very personable and friendly young man, but impressed the officials with his knowledge and appreciation of their own problems. The upshot of that interview was that instead of selling insurance, he sold himself. Wyman S. Randall was invited to come with the Rust Craft organization and set up a purchasing department.

His experience and training had given him an excellent preparation for this assignment. A graduate of Boston University in Business Administration, his first job was in the production department of the Forbes Lithograph Company, and from that work he had progressed to the purchasing department, acquiring a good all-round familiarity with manufacturing requirements and methods, the procurement and use of materials. After that he had done production planning for a commercial printing house, and there had also been a period of sales work for a paper wholesaler.

Mr. Randall has headed the purchasing department for nearly fifteen years. At the start, the company had a hundred and fifty employees and occupied a single floor; both of these factors are now multiplied by seven, and the purchasing operation has grown proportionally. He is a past president of the New England Purchasing Agents Association, and is active in both the local and national association work.

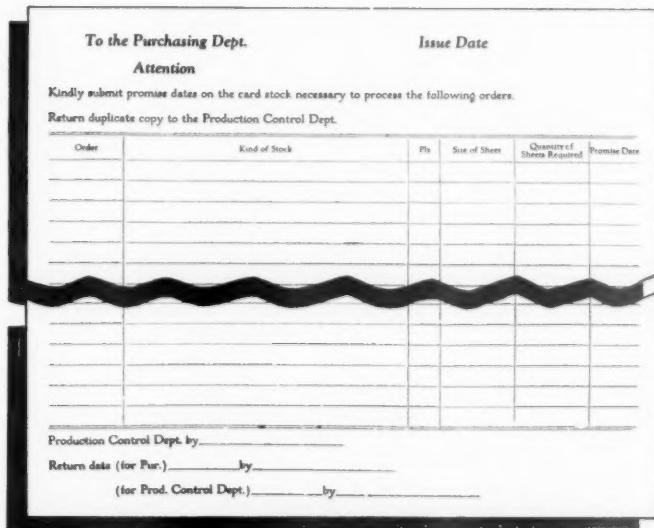
Donald Holbrook, Assistant Purchasing Agent, is also a graduate of Boston University, where he studied purchasing under Robert C. Kelley and prepared his thesis in this field.

The department also includes two secretarial workers, and ten employees in stores work, handling envelope supplies, paper stock, and trimmings.

The general division of responsibility is that the Purchasing Agent buys all raw materials, furniture and equipment, while the Assistant Purchasing Agent buys supply items. The Purchasing Agent also collaborates on machinery purchases, but presses and printing inks are a responsibility of the plant superintendent. With this exception, buying is centralized in the purchasing department. It is a large scale operation, involving about a million pounds of fine paper annually, seventy million envelopes, two and a half million yards of ribbon, a wide variety of trimmings, quantities of paper boxes, chemicals for the engraving department, and the usual run of factory and shipping supplies.

The Purchasing Program

The purchasing department is closely in touch with the planning, creating and manufacturing departments from the time that a new card is first conceived until it is actually in production. This is necessary because greeting cards must be built to definite retail price



Besides the general Material Requisition which is made out in connection with manufacturing orders, there are special forms of Purchasing Requisitions for envelopes and trimmings.

ranges and costs must be accurately predetermined; secondly because the purchasing program must be keyed to production schedules; and thirdly because of the many special parts or trimmings that are incorporated into the designs, such as fringe, glass beads, small metal or plastic moldings. Some of the most interesting purchases are in the latter category. For instance, recent purchase orders called for 30,000 tiny "eight balls," 60,000 miniature wedding rings, 200 pounds of tobacco (attached to cards in small cellophane envelopes), and 600,000 four-leaf clovers, grown for the trade down in the Canal Zone.

This planning is a continuous process, for an entirely new line is brought out each year. The seasonal items are scheduled in accordance with the calendar year, well in advance of the time for which they are

To insure smooth operations in the plant, and a steady flow of the needed materials, there is close cooperation between the Purchasing and Production Control Departments.

intended—Christmas, New Year, Easter, Valentine Day, Mother's Day, Father's Day, Graduation, etc. The "everyday lines," including birthday, illness, shower, anniversary, gift cards, and the like, are scheduled at regular intervals—January, April and September, and there is always provision for occasions of a special timely nature such as the Defense Stamp folder which has achieved a very enthusiastic reception in recent weeks and has sold a substantial number of the stamps for Uncle Sam even in the single ten-cent units which form a part of the card.

Taking Christmas cards as an example, it is planned to have the line sampled and presented to dealers by the middle of February. Well in advance of that date, it is decided how many different cards are to be assigned to this line, and in which price groups. The most successful cards of the previous season are analyzed to determine what made them sell, and new ideas are carefully considered. On the basis of these analyses, the managers of the creative department outline the numbers that are to be developed and the job is turned over to the artists. A master card is created, stock and trimming items are specified, and the purchasing department goes into action so that the first

production run can be completed in February. By April 15th, the company has a pretty good idea of what will be required of each number, and production is scheduled in economical manufacturing quantities. By August, the greater part of the Christmas cards have already been shipped. About the time that Mr. and Mrs. John Public are making their selections at the Christmas card counter, Mr. Randall and his associates are thinking in terms of next Christmas.

Procedure

As in every manufacturing enterprise, regardless of the type of product, an important responsibility of the purchasing department is to arrange for a continuous flow of the essential materials, timed so as to be on hand for use when needed and in the proper balance, that the manufacturing operation may be a smooth and uninterrupted process right through to the completion of the job. At Rust Craft, this involves the major materials of card stock, ribbon and trimmings, envelopes, and boxes. Buying policies vary somewhat in respect to these different material groups, but the entire system is coordinated to achieve the desired result.

Right: Reception Hall.

Lower right: A section of offset lithograph presses.





Above: One of the Creative and Designing Departments.

Upper left: Water color presses.

Left: A portion of Merchandising, Tabulating, and Stock Control Department.

Basically, the procedure follows standard practice—the requisition, purchase record, stores record, and purchase order. Because of differences in handling various types of supplies, there are special forms of requisition, records and orders to fit the particular item.

Paper stock requirements are calculated according to the production program which, as noted, can be projected with considerable accuracy in advance. Since this item has been pretty well standardized in the company's lines, it is possible to buy on contract, to maintain reasonable stocks at the plant without carrying an excessive physical inventory, and to schedule deliveries as required to replenish this stock. It does require working closely with the production control department, and there is a regular form of report, made by the purchasing department at the request of production control, setting forth the delivery promise dates on requirements. Otherwise, procedure follows the normal course.

Requirements of ribbon and trimmings incorporated in the design of a particular card, are necessarily handled on an individual job basis. There is a special form of requisition for these items, coming from the merchandising department as the sales volume of a

number becomes apparent. These requisitions are made out in duplicate and are numbered serially. One copy is for the purchasing department, the other is for the information of the trimmings supervisor. The purchasing department copy is printed on light green stock for quick visual identification. The stock record is carried in a loose-leaf visible binder, showing both the requirements by job number, and the purchases and deliveries, with a running balance.

Envelope purchases present a special case, with annual requirements of about seventy million in a variety of sizes, styles, and paper stock. The purchasing department specifies to the envelope manufacturer the paper to be used, matching the standard card stocks used in the production of the greeting cards. Arrangements are then made for manufacturing in sufficient quantities of each size and style to provide for economical production and to maintain adequate stock reserves, which can be quickly brought in on the instruction of the purchasing department, on a special envelope release order. Thus the company's own manufacturing and packing program is not dependent on the envelope maker's production schedule, but deliveries can be scheduled to carry each job through to

There are two types of Purchase Orders in use. The larger one is designed for envelope purchases, a special and highly important factor in this business. Both Purchase Orders are four-part forms, with working copies for purchasing, stores, and receiving departments.

completion in regular course. This reserve stock is governed by stated minimum and maximum quantities for each number, and an accurate record of the inventory and available surplus over specific job requisitions is kept on 11 x 8½ cards.

Requisitions for envelopes come from the stores department, on a special form similar to the requisition for ribbons and trimmings, but identified by printing on pink paper. The envelope purchase order is larger than the regular purchase order form, to permit the inclusion of more items per order. It is made in four copies. The original (blue) is sent to the vendor. The office copy (yellow) contains space at the bottom for notes and a record of pertinent correspondence. The promise date is entered in this space, also a notation that the order has been properly entered in the stock record. There is a copy (pink) for the stores department, and a copy (white) for the receiving department. The receiver enters the date of receipt and case numbers directly on this copy. If the shipment is complete, quantities are checked and the order copy is returned to the purchasing office. For partial deliveries, a partial receiving ticket is made out in duplicate, one copy being returned to the purchasing office at once, while the duplicate is attached to the purchase order copy, which is retained until deliveries are complete.

Box purchases are made on the basis of daily deliveries from nearby box makers, so that this bulky item is in practically continuous flow from the manufacturer to the packing department, and then to the finished stock room or to the shipping department.

In addition to these major items, there are the usual manufacturing and maintenance supplies, office furniture and equipment, and shipping materials. There



are also a number of merchandising aids, such as a line of unit store fixtures and display racks, some of the latter being manufactured in the Rust Craft plant.

This purchasing department follows its transactions through to the actual use of the material—checking the receipt of deliveries, directing the operation of the stock rooms, checking vendors' invoices, and distributing charges to the proper accounts.

Purchasing Policies

The reception lobby, just off the elevators on the sixth floor, is spacious, comfortable, and attractively decorated with modern designs representative of the company's product but not in the least commercialized. The purchasing office is conveniently adjacent to this lobby, and reception of callers is characteristically prompt and friendly. Here, too, come many visitors from among the company's six thousand retail merchants, for that personal contact is encouraged as a means of promoting good customer relations and of giving an opportunity to demonstrate the care, resources, and technique involved in producing an item which might otherwise be casually dismissed as a commonplace printing job. It is quite in keeping with

Continued on page 144

SIZE		STOCK		CUTOUT								
MIN. STOCK RESERVE		MAX. STOCK RESERVE										
PURCHASE		DEDUCT RESERVE		RECEIVED								
ITEM NO.	PER	DATE	PRICE	CONCERN	QUANTITY	DATE	PER	ITEM NO.	DATE	PRICE	QUANTITY	REQUISITION
ITEMS ON HAND												
1					5						5	
2					4						0	
ORDERED												
DATE	FROM	AMOUNT	ORDER NO.	PROFIT %	TOTAL ORDER	DATE	FROM	AMOUNT	PRICE	BILL	TOTAL REC'D	
RECEIVED												
DATE	Job No.	Amt.	Total	Days	Balance	DATE	Job No.	Amt.	Total	Days	Balance	
DRAFT												
DATE	Job No.	Amt.	Total	Days	Balance	DATE	Job No.	Amt.	Total	Days	Balance	
STOCK												
DATE	Job No.	Amt.	Total	Days	Balance	DATE	Job No.	Amt.	Total	Days	Balance	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2					4						0	
ITEMS ON HAND												
1					5						5	
2			</td									

MAXIMUM PRICES ESTABLISHED BY O.P.A.

SECOND-HAND MACHINE TOOLS

Price Schedule No. 1 (Amended as of Sept. 24, 1941)

Maximum prices are stated in terms of percentage of March 1, 1941 list price of equivalent new machine tool.

	Class 1 1936 and after	Class 2 1930-1935	Class 3 1920-1929	Class 4 Before 1920
Rebuilt and guaranteed	95%	90%	80%	70%
Others	75%	70%	60%	50%

ALUMINUM SCRAP

Price Schedule No. 2 (Amended Nov. 1, 1941)

	Maximum price per pound f.o.b. point of shipment			
	Less than 1,000 lbs.	1,000 lbs. to 20,000 lbs. (truck) or minimum carload	20,000 lbs. or more (truck); or minimum carload	Less than 1,000 lbs.
Pure clips and cable	10	11	11½	11½
Alloy sheet clips, mixed or segregated	8½	9½	10	10
Old sheet and utensils	9½	10½	11	11
Cast and forged scrap, old and new	10	10½	11	11
Borings and turnings, including No. 12	7	8	8½	8½
Pistons free of struts	10	10½	11	11
Pistons with struts	8	8½	9	9
	30,000 lbs. or more	10,000 to 30,000 lbs.	1,000 to 10,000 lbs.	
Secondary aluminum ingot				
98% pure aluminum	15	15½	15½	16
Silicon alloys	15	15½	15½	16
Piston alloys	14½	14¾	15	15½
No. 12 aluminum	14½	14¾	15	15½
Deoxidizing aluminum	13½	13¾	14	14½

ZINC SCRAP

Price Schedule No. 3 (Amended Oct. 17, 1941)

	Maximum price per pound, f.o.b. point of shipment	Single shipments of 10,000 lbs. or more (any combination of these grades)	Single shipments of 20,000 lbs. or more (any combination of these grades)
New zinc clippings, trimmings	7.25	7.75	—
Engravers' and lithographers' plates	7.25	7.75	—
Old zinc scrap	5.75	6.25	—
Unsweated zinc dross	5.80	—	—
Die cast slab	5.80	—	—
New die cast scrap	4.95	—	5.45
Radiator grilles, old and new	4.95	—	5.45
Old die cast scrap	4.50	—	5.00
		Carload lots, delivered to buyer's customary rail receiving point, plus carload freight from E. St. Louis	Less than carload lots, f.o.b. seller's plant or warehouse, plus carload freight from E. St. Louis to seller's plant or warehouse
Secondary slab zinc			
Prime Western and poorer grades	8.25		9.00
Brass special	8.35		9.10
Intermediate and higher grades	8.50		9.25

Iron and Steel Scrap

Price Schedule No. 4 (Revised August 8, 1941)—Dollars per Gross Ton, Delivered Consumers' Plant

Railroad Scrap

(Delivered consumers' plants located on line of railroad originating scrap)

TABLE II

Basing Points—

No. 1 heavy melting	\$21.00	\$19.75	\$19.75	\$19.75	\$20.50
Scrap rails	22.00	20.75	20.75	20.75	21.50
Pierolling rails	22.25	21.75	22.25	22.25	22.75
Scrap rails 3 ft. and under	23.50	22.75	22.75	22.75	23.50
Scrap rails 2 ft. and under	24.00	23.00	23.00	23.00	23.75
Scrap rails 18 in. and under	24.50	23.25	23.25	23.25	24.00

BITUMINOUS COAL

Price Schedule No. 5—Revoked May 1, 1941

IRON AND STEEL PRODUCTS

Price Schedule No. 6

This price schedule, issued April 17, 1941, freezes the prices of iron and steel ingots, semi-finished and finished products, including all products listed in the table of Capacity and Production for Sale, Annual Statistical Report of the American Iron and Steel Institute for 1939, at the levels in effect for the first quarter of 1941, or in effect on April 16, 1941. It recognizes the basing point, price leadership and extras systems customarily used in this industry, without either approving or disapproving these practices.

The schedule made no pretense of establishing a "proper" maximum price level for these products. It was designed to prevent a price rise in view of recent wage increases in the industry, which might set a general inflationary price increase into motion because of the importance of steel products in a wide range of manufacture and use, and because of the leadership of this large industry. It was announced subject to ad-

justment for changing conditions, and pending a more accurate study and measurement of production and distribution factors which would require considerable time.

A revision, effective June 20th, altered the definition of "covering basing point" to include both "that established basing point, the use of which results in the lowest delivered price at the place of delivery" and "the established basing point at or nearest to place of production or of origin of shipment." The purpose of this revision was to provide for shipments by producers into areas not customarily served by them, but now required by the defense agencies to facilitate the progress of the defense program.

On November 12th, O.P.A. launched a study of such "dislocated tonnage" in terms of both tonnage and dollar value, detailed reports being required of producers not later than November 25th, covering June and September shipments.

Combed Cotton Yarn

Price Schedule No. 7

Amended as of August 1, 1941

Prices Per Pound, Delivered Purchasers
Customary Receiving Point

	Single	2-Ply
10s	\$0.385	\$0.425
12s	.39	.43
14s	.395	.435
16s	.40	.44
18s	.405	.445
20s	.41	.45
24s	.42	.46
26s	.43	.47
30s	.45	.49
36s	.48	.53
38s	.49	.54
40s	.50	.55
50s	.58	.63
60s	.67	.72
70s	.77	.82
80s	.87	.92
86s	1.00	1.12
90s	1.08	1.20
100s	1.28	1.42
110s	...	1.64
120s	...	1.88

This schedule applies only to combed cotton yarns of ordinary commercial quality. For yarns with excess twist, reverse twist, three or more ply, high break, or requiring the use of extra length American cotton, Pima cotton, Egyptian cotton or Sea Island cotton a premium over the above prices may be charged to cover the additional cost involved in manufacturing these special qualities.

NICKEL SCRAP

And Other Scrap Materials Containing Nickel

Price Schedule No. 8

Price f.o.b. Point of Shipment

Pure scrap nickel	26c per pound of material
Ferro-nickel-chrome-iron scrap	26½c per pound of nickel content; 8c per pound of chrome content; no payment for other metals
Ferro-nickel-iron scrap	26½c per pound of nickel content; no other payment allowed
Monel metal scrap—	
New clippings	20c per pound of material
Soldered sheet	18c per pound of material
No. 1 castings and turnings	15c per pound of material
Cupro-nickel alloy scrap	26c per pound of nickel content; 8c per pound for copper if nickel and copper content combined is at least 90%
Stainless steel scrap—	
Containing 16 to 20% chrome, 7 to 10% nickel.	
Sheets, clippings and solids	\$90 per gross ton
Turnings and borings	\$60 per gross ton
All other grades	28c per pound of nickel content; 9½c per pound of chrome; no payment for other metals
Straight chrome type—	
Containing 16 to 18% chrome	\$40 per gross ton
Containing 12 to 14% chrome	\$35 per gross ton
Nickel steel scrap—	
Less than 1% nickel	Determined by like grades of steel scrap in schedule No. 4
More than 1% nickel	As above, plus \$1 per gross ton for each ¼ per cent of nickel content
Monel ingot and shot	27c
Copper-nickel-shot—	
Containing 48 to 52% of each and not more than ½% of foreign materials	25½c

Note: These prices apply to sale of unprepared material in lots of 30,000 pounds or more, exceptions being allowed to converters, and premiums being granted for less than quantity shipments.

HIDES

Price Schedule No. 9 (Amended Sept. 13, 1941) Packer Hides (Selected)

Cents per pound, f.o.b. shipping point

	Nos. 1s	No. 2s
Native steers, heavy and light, extreme light;		
native cows, heavy and light.....	15½	14½
Butt branded steers; Texas steers, heavy and light; branded cows.....	14½	13½
Texas steers, extreme light (23 to 48 lb.).....	15	14
Colorado steers.....	14	13
Native bulls.....	12	11
Branded bulls.....	11	10

Other than Packer Hides (Unselected)

	Trimmed	Untrimmed
Free of brand steers and cows.....	15	14
Branded steers and cows.....	14	13
Free of brand bulls.....	11½	10½
Branded bulls.....	11	10

Pacific Coast Hides

	Trimmed	Untrimmed
Native and branded steers and cows, flat.....	13½	12½
Native and branded bulls.....	10	9

Packer Calf and Kipskins (No. 1 Selection)

	Cents per pound
Chicago packer heavy northern (9½ to 15 lbs.).....	27
do lights (less than 9½).....	23½
Packer kips, No. 1 northern native (15 to 30 lbs.).....	20
Branded kips (30 lbs. and down).....	17½
Slunks, flat No. 1s and 2s. Regular, \$1.10 each; hairless, 55c each.	

Chicago Calf and Kipskins (Selected)

	Cents per pound
Chicago City (10 to 15 lbs.).....	23
do (8 to 10 lbs.).....	20½
Native kips (15 to 30 lbs.).....	18
Branded kips (30 lbs. and down).....	17
Chicago City (less than 8 lbs.) \$1.43 per skin.	

New York Calf and Kipskins (Selected)

	Price per skin
Packer	Collector
3 to 4 lbs.	1.25
4 to 5 lbs.	1.40
5 to 7 lbs.	1.80
7 to 9 lbs.	2.80
9 to 12 lbs.	3.80
12 to 17 lbs.	4.20
17 lbs. or more....	4.60

Country Calf and Kipskins

(Flat for No. 1s and No. 2s)

	Cents per lb.
Country calf (10 lbs. and down).....	16
do (10 to 15 lbs.).....	18
do kips (15 to 30 lbs.).....	16

Pacific Coast Calf and Kipskins

(Flat for No. 1s and No. 2s)

	Cents per lb.
Pacific Coast kips (15 lbs. or more).....	19¼
Pacific Coast New York City trimmed kips (15 lbs. or more).....	21
Pacific Coast trimmed calf (6 to 13 lbs.).....	26
do (13 to 15 lbs.).....	23½
Pacific Coast calf (less than 6 lbs.) \$1.25 per skin.	

PIG IRON

Price Schedule No. 10

Basing Point Base Prices per gross ton—2,240 lbs.

	No. 2 Foundry	Basic	Bess.	Mall.	Low Phos.	High Sil.	Gray Forge	Charcoal
Bethlehem, Pa.; Everett, Mass.; Swedeland, Pa.	25.00	24.50	26.00	25.50	29.50	.....	.....	.....
Steelton, Pa.	.....	24.50	.....	.....	.....	.....	.....	.....
Birdsboro, Pa.	25.00	24.50	26.00	25.50	29.50	.....	.....	.....
Sparrows Point, Md.	25.00	24.50	.....	.....	.....	.....	.....	.....
Erie, Pa.	24.00	23.50	25.00	24.50	.....	.....	.....	.....
Neville Island, Pa.; Sharpsville, Pa.; Chicago; Granite City, Ill.; Cleveland; Toledo; Youngstown; Detroit	24.00	23.50	24.50	24.00	.....	.....	.....	.....
Buffalo	24.00	23.00	25.00	24.50	29.50	30.75	.....	.....
Hamilton, Ohio	24.00	23.50	.....	24.00	.....	.....	.....	.....
Duluth	24.50	.....	25.00	24.50	.....	.....	.....	.....
Birmingham	20.38	19.00	25.00	.....	.....	.....	.....	.....
Provo, Utah	22.00	.....	.....	.....	.....	.....	.....	.....
Jackson County, Ohio	.....	.....	.....	.....	29.50	.....	.....	.....
Valley or Pittsburgh Furnace	.....	.....	.....	.....	.....	23.50	.....	.....
Lake Superior Furnace	.....	.....	.....	.....	.....	.....	28.00	.....
Lyles, Tenn., High Phos. Furnace	.....	.....	.....	.....	.....	.....	28.50	.....
Lyles, Tenn., Low Phos. Furnace	.....	.....	.....	.....	.....	.....	33.00	.....

Additional switching charges for delivery within switching limits of the respective districts. Differentials for silicon, phosphorous and manganese content. Exceptions: Pittsburgh Coke & Iron Co. (Sharpsville Furnace only), and Struthers Iron & Steel Co., 50 cents per ton additional.

Cotton Gray Goods

Price Schedule No. 11

Amended as of Oct. 21, 1941

F.O.B. Seller's Point of Shipment

Combed broadcloth made of single ply yarn:	Cents per yd.
37-in. 136x60	14½
37-in. 128x58	14½
37-in. 144x76	15½
37-in. 152x80	17
Combed lawns:	
36-in. 76x72	9¾
36-in. 88x80	10¾
40-in. 68x56	9
40-in. 72x68	10
40-in. 76x72	10½
40-in. 88x80	11½
40-in. 96x92	12½
40-in. 96x100	13½
40-in. 108x112	16½
45-in. 76x72	11½
45-in. 88x80	12½
Dimities:	
36-in. 96x68	10¾
38½-in. 114x64	11¾
36½-in. 116x76	12½
Voile:	
39-in. 60x52, slack	9
Seconds and Shorts	

The price for seconds and shorts of all cotton gray goods shall not exceed 95 per cent of the prices herein established for such goods.

Brass Mill Scrap

Price Schedule No. 12

Amended October 3, 1941

(Per Pound, F.O.B. Point of Shipment)

Kind or grade of scrap—	Heavy scrap	Rod ends	Turnings	Quantity Differentials
Commercial bronze:				Premium on shipments of:
Containing 95% or more copper.....	9½c	9½c	8¾c	15,000 lbs. or more at one time..... 5¢c
Containing minimum of 90% up to 95% copper.....	9¾c	9¾c	8¾c	40,000 lbs. or more at one time..... 1c
Red brass:				A lot of 15,000 pounds may be made up of any kind or grade of heavy scrap, or of any kind or grade of turnings and rod ends, but heavy scrap may not be mixed with either turnings or rod ends or both, to make up a lot of 15,000 pounds. A lot of 40,000 pounds for the purposes of this schedule may be made up of any kind or grade of brass mill scrap.
Containing minimum of 80% copper...	9½c	8¾c	8¾c	
Best quality brass:				
Containing minimum of 1% up to 80% copper.....	8¾c	8½c	.....
Nickel silver:				
5% nickel.....	9½c	9c	4½c	Other Kinds of Scrap
10% nickel.....	10½c	9½c	5½c	All other kinds or grades of brass mill scrap, except cupro-nickel alloy scrap, should be sold at normal differentials from principal kinds or grades. Cupro-nickel alloy scrap should be sold in accordance with Price Schedule No. 8, which establishes maximum prices for scrap and secondary materials containing nickel.
15% nickel.....	10½c	10½c	5½c	

DOUGLAS FIR PLYWOOD

Price Schedule No. 13

PLYPANEL

(Price Per M Sq. Ft., f. o. b. Mill)

	Sound 2 Sides		Good 1 Side		Good 2 Sides	
	C-L	LC-L	C-L	LC-L	C-L	LC-L
7/16-in., 3 ply, S2S to 1/4-in. or 1/4-in., 3 ply, S2S to 7/16-in.—						
24-in. and under.....	\$35.65	\$38.85	\$43.05	\$46.85	\$50.45	\$54.95
Over 24-in. to 36-in.....	36.65	39.80	45.85	49.95	53.20	58.00
Over 36-in. to 48-in.....	38.50	41.85	49.55	53.95	58.75	64.05
5/16-in., 3 ply, S2S to 1/4-in.—						
24-in. and under.....	32.15	35.35	39.55	43.35	46.95	51.45
Over 24-in. to 36-in.....	33.15	36.30	42.35	46.45	49.70	54.50
Over 36-in. to 48-in.....	35.00	38.35	46.05	57.45	55.25	60.55
3/8-in., 3 ply, S2S to 7/16-in.—						
24-in. and under.....	38.70	42.35	46.05	50.45	53.40	58.45
Over 24-in. to 36-in.....	39.55	43.35	48.80	53.40	56.20	61.50
Over 36-in. to 48-in.....	41.45	45.30	52.45	57.45	61.70	67.60
7/16-in., 3 ply, S2S to 5/16-in.—						
24-in. and under.....	43.25	47.45	50.60	55.45	58.00	63.55
Over 24-in. to 36-in.....	44.20	48.45	53.40	58.45	60.80	66.55
Over 36-in. to 48-in.....	46.05	50.45	57.10	62.55	66.30	72.60
1/2-in., 5 ply, S2S to 7/16-in.—						
24-in. and under.....	58.95	64.55	66.30	72.60	73.65	80.65
Over 24-in. to 36-in.....	59.85	65.50	69.05	75.65	76.45	83.70
Over 36-in. to 48-in.....	61.70	67.60	72.70	79.65	81.90	89.75
1/2-in., 5 ply, S2S to 1/2-in.—						
24-in. and under.....	58.95	64.55	66.30	72.60	73.65	80.65
Over 24-in. to 36-in.....	59.85	65.50	69.05	75.65	76.45	83.70
Over 36-in. to 48-in.....	61.70	67.60	72.70	79.65	81.90	89.75
5/8-in., 5 ply, S2S to 7/16-in.—						
24-in. and under.....	69.95	76.65	77.35	84.65	84.65	92.75
Over 24-in. to 36-in.....	70.90	77.65	80.10	87.20	87.40	95.75
Over 36-in. to 48-in.....	72.70	79.65	83.75	91.75	92.95	101.80
11/16-in., 5 ply, S2S to 5/8-in.—						
24-in. and under.....	69.95	76.65	77.35	84.65	84.65	92.75
Over 24-in. to 36-in.....	70.90	77.65	80.10	87.20	87.40	95.75
Over 36-in. to 48-in.....	72.70	79.65	83.75	91.75	92.95	101.80
3/4-in., 5 ply, S2S to 1/2-in.—						
24-in. and under.....	79.25	86.75	86.55	94.75	93.90	102.85
Over 24-in. to 36-in.....	80.10	87.70	89.30	97.75	96.65	105.85
Over 36-in. to 48-in.....	81.90	89.75	92.95	101.80	102.15	111.95
13/16-in., 5 ply, S2S to 3/4-in.—						
24-in. and under.....	79.25	86.75	86.55	94.75	93.90	102.85
Over 24-in. to 36-in.....	80.10	87.70	89.30	97.75	96.65	105.85
Over 36-in. to 48-in.....	81.90	89.75	92.95	101.80	102.15	111.95
7/8-in., 5 ply, S2S to 13/16-in.—						
24-in. and under.....	88.35	96.80	95.70	104.85	103.10	112.95
Over 24-in. to 36-in.....	89.30	97.75	98.45	107.85	105.85	115.95
Over 36-in. to 48-in.....	91.10	99.85	102.15	111.95	111.40	121.95
7/8-in., 7 ply, S2S to 13/16-in.—						
24-in. and under.....	94.75	103.85	102.15	111.95	109.50	120.00
Over 24-in. to 36-in.....	95.70	104.85	104.95	114.95	112.30	123.00
Over 36-in. to 48-in.....	97.55	106.90	108.65	119.00	117.80	129.05
11/8-in., 7 ply, S2S to 7/16-in.—						
24-in. and under.....	94.75	103.85	102.15	111.95	109.50	120.00
Over 24-in. to 36-in.....	95.70	104.85	104.95	114.95	112.30	123.00
Over 36-in. to 48-in.....	97.55	106.90	108.65	119.00	117.80	129.05
11/8-in., 7 ply, S2S to 1-in.—						
24-in. and under.....	104.05	113.90	111.40	121.95	118.75	130.00
Over 24-in. to 36-in.....	104.95	114.95	114.15	125.05	121.55	133.05
Over 36-in. to 48-in.....	106.75	116.90	117.80	129.05	127.05	139.20
17/16-in., 7 ply, S2S to 11/8-in.—						
24-in. and under.....	117.80	129.05	125.20	137.05	132.55	145.15
Over 24-in. to 36-in.....	118.75	130.00	127.95	140.15	135.25	148.20
Over 36-in. to 48-in.....	120.60	132.10	131.60	144.15	140.80	154.25

PLYCORD

All Sizes Up to 48x96-in.

(Douglas Fir Plywood Sheathing, Rough)

Price per M sq.
ft. f.o.b. mill
C/L LC/L

7/16-in., 3 ply	\$25.30	\$26.40
5/8-in., 3 ply	30.30	31.75
1/2-in., 3 or 5 ply, mill option	40.45	43.00
5/8-in., 3 or 5 ply, mill option	50.55	53.95

PLYWALL

All Sizes Up to 48x96-in.

(Douglas Fir Plywood Wallboard)

7/16-in., 3 ply, S2S 1/4-in.....	\$28.00	\$29.20
7/16-in., 3 ply, S2S 3/8-in.....	38.50	40.90
7/16-in., 5 ply, S2S 1/2-in.....	52.50	56.15
7/16-in., studding strips (per M lineal ft.)	5.30	5.30

PLYFORM

All Sizes Up to 48x96-in.

(Concrete Form Panels)

7/16-in., 3 ply, S2S 1/4-in., (form liners)	\$45.00	\$48.55
7/16-in., 5 ply, S2S 1/2-in.....	77.10	84.15
5/8-in., 5 ply, S2S 1/2-in.....	82.40	90.00
11/16-in., 5 ply, S2S 1/2-in.....	86.50	94.15
3/4-in., 5 ply, S2S 1/2-in.....	91.75	99.95
7/8-in., 5 ply, S2S 1/2-in.....	95.30	104.05

AUTOMOBILE AND INDUSTRIAL PLYWOOD

(Rough Panels Only)

Sizes Up to 48x96-in.

C/L LC/L

7/16-in., 3 ply	\$29.20	\$31.95
5/8-in., 3 ply	29.20	31.95
3/4-in., 3 ply	35.00	38.50
1/2-in., 5 ply	48.80	53.40
9/16-in., 5 ply	53.75	58.90
5/8-in., 5 ply	58.75	64.35
11/16-in., 5 ply	63.70	69.80
3/4-in., 5 ply	68.65	75.20
7/8-in., 5 ply	78.60	86.05
7/8-in., 7 ply	82.30	90.10

EXTERIOR GRADE PANELS

(Per M Sq. Ft. in Carload Lots, f.o.b. Mill)

Sound Indus. Sound

2 Sides Grade 1 Side

7/16-in. sanded, 7/16-in. un-sanded	55.00	53.00	51.00
5/8-in. sanded, 5/8-in. un-sanded	61.00	59.00	57.00
11/16-in. sanded, 11/16-in. un-sanded	81.50	79.00	76.50
3/4-in. sanded, 3/4-in. un-sanded	88.00	86.00	84.00
7/8-in. sanded, 7/8-in. un-sanded	95.00	93.50	91.50
5/8-in. sanded, 5/8-in. un-sanded	103.50	101.50	99.50
11/16-in. sanded, 11/16-in. un-sanded	112.00	110.00	107.50
3/4-in. sanded, 3/4-in. un-sanded	121.00	119.00	117.00
7/8-in. sanded, 7/8-in. un-sanded	143.00	140.50	138.50
7/8-in. sanded, 7/8-in. un-sanded	152.00	149.50	147.00
11/16-in. sanded, 11/16-in. un-sanded	160.50	158.50	156.50
1-in. sanded, 1 1/16-in. un-sanded	170.50	168.00	166.00
1 1/8-in. sanded, 1 1/8-in. un-sanded	180.00	178.00	176.00
1 1/4-in. sanded, 1 1/4-in. un-sanded	190.50	188.00	185.00

RAW SILK AND SILK WASTE

Price Schedule No. 14 (Amended Sept. 30, 1941)

TABLE I

Type and grade percentage evenness	Prices Per Pound, Ex Seller's Warehouse							Special AAA		
	E	D	C	B	A	AA	AAA			
* Japan, white, ivory and cream—Denier.	73	78	81	83	85	87	90	92	93	94
9-11	\$4.31	\$4.33	\$4.35	\$4.37	\$4.40	\$4.43	\$4.49	\$4.58	\$4.68	\$4.78
10-12	4.21	4.23	4.25	4.27	4.30	4.33	4.39	4.48	4.58	4.68
11-13	4.06	4.08	4.10	4.12	4.15	4.18	4.24	4.33	4.43	4.53
12-14	3.11	3.13	3.15	3.17	3.20	3.23	3.29	3.38	3.48	3.58
13-15 and 14-16	3.06	3.08	3.10	3.12	3.15	3.18	3.24	3.33	3.43	3.53
15-17 to 18-20, inc.	3.04	3.06	3.08	3.10	3.13	3.16	3.22	3.31	3.41	3.51
20-22 to 30-32, inc.	3.00	3.02	3.04	3.07	3.10	3.15	3.20	3.29	3.39	3.49
40-44, 41-43 and 42-44	3.00	3.02	3.04	3.07	3.10	3.30	3.35	3.41	3.54	3.64
60-66, 60-80, 62-64 and 83-85	3.00	3.02	3.04	3.07	3.10	3.15	3.20	3.29	3.39	3.49
* Japan yellow and Italian yellow and Persian white—										
20-22 to 30-32, inc.	2.95	2.97	2.99	3.02	3.05	3.10	3.15	3.24	3.34	3.44
40-44	2.95	2.97	2.99	3.02	3.05	3.25	3.30	3.39	3.49	3.59

* Any Japan silk of undesignated grade (i. e., percentage evenness) shall sell at a price not exceeding 10c per pound below the Grade E. 73 per cent evenness, price for its denier.

TABLE II

Type and grade percentage evenness	Prices Per Pound, Ex Seller's Warehouse								Special AAA		
	G	F	E	D	C	B	A	AA	AAA		
* China, white and cream—Denier	63	68	73	78	81	83	85	87	90	92	94
9-11	\$4.15	\$4.25	\$4.31	\$4.38	\$4.43	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00
† Re-reeled—											
10-12	4.05	4.15	4.21	4.28	4.33	4.40	4.50	4.60	4.70	4.80	4.90
11-13	3.90	4.00	4.06	4.13	4.18	4.25	4.35	4.45	4.55	4.65	4.75
12-14	2.95	3.05	3.11	3.18	3.23	3.30	3.40	3.50	3.60	3.70	3.80
13-15 to 18-20, inc.	2.90	3.00	3.06	3.13	3.18	3.25	3.35	3.45	3.55	3.65	3.75
20-22 to 30-32, inc.	2.80	2.90	2.95	2.97	2.99	3.07	3.15	3.22	3.35	3.45	3.55
40-44, 41-43 and 42-44	2.80	2.90	2.95	2.97	2.99	3.07	3.15	3.37	3.50	3.60	3.70
* China, yellow—											
13-15 to 18-20, inc.	2.80	2.90	3.96	3.03	3.08	3.15	3.25	3.35	3.45	3.55	3.65
† Re-reeled—											
20-22 to 30-32, inc.	2.73	2.83	2.88	2.90	2.92	3.00	3.08	3.15	3.28	3.38	3.48

* Any China silk of undesignated grade (i. e., percentage evenness) shall sell at a price not exceeding 75c per pound below the Grade G. 63 per cent evenness, price for its denier.

† The prices set forth are for re-reeled China silk. Ordinary reeled China silk shall sell at prices not exceeding 5c per pound below the prices for re-reeled China silk for equivalent colors, deniers and qualities.

TABLE III

Prices Per Pound. Ex Seller's Warehouse

DOUPIONS, WHITE and YELLOW

Denier	Maximum price
40- 60	\$2.00
60- 80	1.95
70- 90	1.90
100-120	1.85
100-150	1.85
200-250	2.00

CANTON SILK

Denier	Maximum price
14-16	\$2.55
20-22	2.40
White Pearl chop grade.	2.70

TSATLEE SILK

Extra	Maximum price
Double extra	\$2.40

TUSSAH SILK

Ordinary	Maximum price
Bleached	\$1.60

TABLE IV

Imported Silk Waste

	Maximum price
* Canton open waste.....	\$0.64
* China long waste.....	.92
* Pierced cocoons .....	.85
† Peignees	1.85

* Per pound, ex seller's warehouse. † Per pound, in bond, warehouse, Port of New York.

TABLE V

Domestic Silk Waste

(Per pound, f. o. b. shipping point)	Maximum price
Winders waste (untwisted)— Untinted	\$0.90
Tinted .....	.85
Tram waste (1.5 turns per inch) .....	.80
Crepe or grenadine waste (6 or more turns per inch) ..	.22
Cut skeins .....	.95

COPPER

Price Schedule No. 15

Electrolytic or Lake Copper, ASTM Standard B5-27 or B4-27, delivered Conn. Valley points

12c

Casting copper, 99.5% pure, f.o.b. refinery

11 3/4c

Above prices are for wire bars or ingot bars in carload lots.

Customary differentials for other grades, kinds, shapes or forms, and for delivery at other points.

Differentials for less carload lots: 0-499 lbs., 2c; 500-999 lbs., 1 1/2c; 1,000-4,999 lbs., 1c; 5,000 lbs.-carload, 3/4c.

NOTE

In view of the shortage of supplies and the necessity of bringing out all possible production, government agencies are permitted to pay in excess of the stated maximum prices to marginal mines with higher producing costs. No sales are to be made to other buyers except in accordance with this schedule.

RAW SUGAR
Price Schedule No. 16
(Amended as of Oct. 24, 1941)

Raw cane sugars, 96 degrees polarization, New York City duty paid basis, cost and freight, per pound.....3.50 cents
 Adjustment allowed for each degree of polarization above or below 96 degrees, in accordance with method customarily used prior to August 14, 1941.

Differentials allowed for deliveries from offshore producing areas to ports other than New York City, by the difference in freight cost from port of shipment to port of arrival and freight cost to New York.

Maximum prices for continental U. S. raw cane sugars, f.o.b. raw sugar mill, is equal to maximum prices for Cuban sugars of like test, duty paid cost and freight basis at Customs port of entry nearest to raw sugar mill, less the published freight rate from the raw sugar mill to the nearest (freight-wise) refinery.

TIN
Price Schedule No. 17
(Amended Sept. 19, 1941)

	Ex Dock or Store, Port of New York (per pound)	Differentials for small lot sales	
A. 99.80% pure or higher, meeting U. S. Treasury specification S-14, except that it need not be free of scrap and remelted metal .....	.52	2,240 to 11,199 lbs.....	add 1c per lb.
B. 99.75 to 99.79% pure, and 99.80% pure or higher which does not otherwise meet the specifications of Grade A.....	.51625	1,000 to 2,239 bales	add 1½c per lb.
C. Cornish refines .....	.51625	500 to 999 lbs.	add 2½c per lb.
D. 99.00 to 99.74% pure .....	.51125	Under 500 lbs.	add 3c per lb.
E. Below 99% pure (for tin content).....	.51		

Differentials for other ports of entry in accordance with actual difference in ocean freight rates.

BURLAP

Price Schedule No. 18

(For deliveries after Jan. 1, 1942, duty paid, in quantities of twenty-five bales or more)

	7½ oz.	8 oz.	9 oz.	10 oz.	10½ oz.	12 oz.
45 in.	9.10	9.50	...	11.95	...	...
40 in.	8.00	8.50	9.65	10.60	11.00	12.70
36 in.	7.40	7.70	8.75	9.70	...	11.55
32 in.	6.60	6.90	...	8.70	...	...

Customary premiums are allowed for quantities of less than twenty-five bales, but in no case to exceed above maximum prices by more than 10%.

Schedule does not apply to sales of less than one bale.

Deliveries before Dec. 31, 1941, have a maximum price schedule approximately 5% higher than those shown above.

COPPER SCRAP

Price Schedule No. 20
(Amended Oct. 17, 1941)

	per pound f.o.b. point of shipment
No. 1 copper wire	10c
No. 1 heavy copper	10c
No. 2 copper wire (containing 96% copper)	9c
Mixed heavy copper (containing 96% copper) ..	9c
Light copper (containing 92% copper)	8c

Maximum prices are to be adjusted at the rate of 0.11775c for each 1% variation in the copper content as specified above. Premiums allowed: (1) for copper scrap in crucible shape, 1¼c per pound; (2) for shipments of 40,000 pounds or more (does not apply to scrap in crucible shape) ½c per pound.

PENNSYLVANIA CRUDE OIL

Price Schedule No. 22

	per barrel
Pennsylvania Bradford Grade crude oil.....	2.75
Southwest Pennsylvania crude oil.....	2.40
Eureka crude oil	2.34
Southeastern Ohio	2.30
Oil City-Titusville crude oil	
Group A: Cochran, Franklin, Hamilton and Little Districts	2.68
Group B: Titusville District	2.67
Group C: Turkey and Tidiout	2.66
Group D: Bear Creek and Porky Districts	2.65
Group E: Eldenau, Bowl Creek, Rough Run, Carbon, Ditner, Bredin, McJunkin, Jameson, Kennerdall, Emington, Tiona, Lacy and Kinszua Districts	2.63

FORMALDEHYDE
Price Schedule No. 21

Price per pound, shipped from producer's shipping points, f.o.b. New York; West Haverstraw, N. J.; Garfield, N. J.; Perth Amboy, N. J.; or Tallant, Okla.; freight equalized.

	Carload Lots	Less than Carload	Carload Lots	Less than Carload
Tank cars (70,000 to 72,000 lbs.) .....	.0425	...		
Tank truck or wagon .....	...	.0450		
Drums (475 lbs.) .....	.0540	.0590		
Barrels (450 lbs.) .....	.0575	.0625		
Kegs or half barrels (225 lbs.) .....	.0675	.0725		
Barrels (200 lbs.) .....	...	.0725		
Kegs (125 lbs.) .....	.0700	.0750		
Carboys (100 lbs.) .....			.0600	.0650
Kegs (90 lbs.) .....			.0750	.0800
Kegs (60 lbs.) .....			.0800	.0850
Carboys (45 lbs.) .....			.0700	.0750
Drums (45 lbs.) .....			...	.0850
Kegs (45 lbs.) .....			.0900	.0950

Schedule does not apply to quantities of less than 45 lbs.

Maximum prices for deliveries from local stocks other than producers' shipping points are as above, plus freight to warehouse from nearest shipping point listed above, plus 1c per pound.

SOUTHERN PINE

Price Schedule No. 19 (Amended Sept. 4, 1941)

Maximum f. o. b. Mill Prices per 1,000 Feet Board Measure Boards and Strips (Rough Green)

Grade No. 1—	*Standard.	Length						18 & 20-ft.
		8-ft.	10-ft.	12-ft.	14-ft.	16-ft.		
1x3	\$34.00	\$34.00	\$35.00	\$35.00	\$35.00	\$36.50	\$37.00	
1x4	32.00	32.00	33.00	33.00	33.00	34.50	35.00	
1x6	32.00	32.00	33.00	33.00	33.00	34.50	35.00	
1x8	33.00	33.00	34.00	34.00	34.00	35.50	36.00	
1x10	35.00	35.00	36.00	36.00	36.00	37.50	38.00	
1x12	43.00	43.00	44.00	44.00	44.00	45.50	46.00	
No. 2—		6 & 8-ft.						
1x2 and 3	26.00	26.00	27.50	28.00	28.00	28.50	30.00	
1x4	23.00	23.00	24.50	25.00	25.00	25.50	27.00	
1x6	25.00	25.00	26.50	27.00	27.50	28.00	30.00	
1x8	25.00	25.00	26.50	27.00	27.50	28.00	30.00	
1x10	25.50	25.50	28.50	28.50	29.00	29.50	31.50	
1x12	30.00	30.00	33.00	33.50	34.00	34.50	37.50	
No. 3—		6 & 8-ft.						
1x4	19.00	19.00	20.50	21.00	21.00	21.50	23.00	
1x6	20.00	20.00	21.50	22.00	22.50	23.00	25.00	
1x8	20.00	20.00	21.50	22.00	22.50	23.00	25.00	
1x10	20.50	20.50	23.50	23.50	24.00	24.50	26.50	
1x12	21.00	21.00	24.00	24.50	25.00	25.50	28.50	

Additions to rough green prices:

For rough, air dried, add \$1.50.

For rough, kiln dried, add \$2.50.

For S1S, S2S, S3S, S4S, and matched, or shiplap, standard or thinner, add \$1.50.

For ripping or resawing, add \$1 per 1,000 board feet for each cut.

For chemical anti-stain treatment, add 50c.

Where a restricted standard length is specified, either 8-ft. to 18-ft. or 8-ft. to 20-ft., add \$1.

Odd lengths or fractional lengths shall be counted and priced as next longest even length.

*Standard lengths are 4-ft. to 20-ft., inclusive in multiples of 2-ft., and the following percentage of short lengths may be included in all shipments in which the lengths are not specifically restricted:

No. 1—	5% 8-foot
No. 2	5% 4-foot
	5% 6-foot
	5% 8-foot

DIMENSION (ROUGH GREEN)

Grade No. 1—	Random.	Length						22 & 24-ft.
		8-ft.	9-ft.	10-ft.	12-ft.	14-ft.	16-ft.	
2x3	\$31.00	\$31.00	\$32.00	\$31.00	\$31.00	\$32.00	\$33.00	\$34.50 \$35.50
2x4	30.00	30.00	31.00	30.00	30.00	31.00	32.00	33.50 \$40.00
2x6	29.00	29.00	30.00	29.00	29.00	30.00	30.50	32.50 \$39.00
2x8	30.00	30.00	31.00	30.00	30.00	31.00	31.50	33.50 \$40.00
2x10	33.50	33.50	33.50	35.00	35.00	35.00	36.00	39.50 \$46.00
2x12	35.50	35.50	35.50	37.00	37.00	37.00	38.00	41.50 \$48.00

No. 2—

2x3	27.00	27.00	28.00	27.00	27.00	28.00	29.00	30.50 31.50
2x4	26.00	26.00	27.00	26.00	26.00	27.00	28.00	29.50 30.50 36.00
2x6	24.00	24.00	25.00	24.00	24.00	25.00	25.50	27.50 28.50 34.00
2x8	25.00	25.00	26.00	25.00	25.00	26.00	26.50	28.50 29.50 35.00
2x10	26.50	26.50	27.50	29.50	28.50	28.50	28.50	32.00 34.00 39.50
2x12	28.50	28.50	29.50	29.50	29.50	30.50	34.00	35.00 40.50

Additions to rough green prices:

For rough, air dried, add \$2.

For rough kiln dried, add \$3.

For S1S, S2S, S3S, S4S, add \$1.

For working to shiplap, center match, dressed and matched, or grooved, add \$2.

For ripping or resawing, add \$1 per 1,000 board feet for each cut.

For chemical anti-stain treatment, add 50c.

Random lengths may be 8-ft. to 16-ft. or 8-ft. to 20-ft.

Odd or fractional lengths, except 9-ft., shall be counted and priced as next longest even length.

EXCEPTIONS TO PRICE SCHEDULES

Applications for modification of a price schedule should be addressed to the Office of Price Administration, Washington, D. C. Each application must be accompanied by an affidavit, signed by the individual or by an officer or partner of the business entity making it, setting forth all the relevant facts, including the length of time that the practice desired to be continued has been in effect, the additional labor costs, if any, arising because of this practice, and the reason why its continuance is necessary to the applicant. Because of the variety of situations involved, no standard form of application has been adopted. Facts presented in such an affidavit, however, will be given full consideration.

*DROP SIDING, KILN DRIED STANDARD LENGTHS

(Drop Siding—All Patterns)

Gr. B &	better	Gr. C.	Gr. D.
Plain end, 6"	\$51.00	\$48.00	\$39.00
do 8"	53.00	50.00	40.00
Bevel siding	47.00	44.00	35.00
Gr. No. 2, Gr. No. 3.			
Plain end, 6"	\$31.00	\$25.00	
do 8"	32.00	25.00	
Bevel siding	30.50	22.00	
Add \$2 for specified lengths.			

*STANDARD BEADED OR V-GROOVED CEILING, KILN DRIED STANDARD LENGTHS

(Plain End)

Gr. B &	better	Gr. C.	Gr. D.	Grade
11-16 & 3/4	\$49.00	\$46.00	\$34.00	\$29.00
9-16	40.00	38.00	30.00	26.00
Add \$2 for specified lengths.				

* Standard lengths are 4 ft. to 20 ft. inclusive, and the following percentages of short lengths may be included in all shipments in which the lengths are not specifically restricted:

A and B	5% 8 and/or 9 ft.
C	5% 6 and/or 7 ft.
D and No. 2	5% 4 and/or 5 ft.
	5% 6 and/or 7 ft.
No. 3 not to exceed.	5% 8 and/or 9 ft.
	20% 4 and 6 ft.

Flooring (no heart specification), Plain End, Kiln Dried

*Standard Lengths

Grade B & Better	Grade C	Grade D	Grade No. 2	Grade No. 3
Edge Grain:				
1x3	\$65.00	\$57.00	\$42.00	
1x4	63.00	55.00	40.00	
Near Edge Grain:				
1x3	58.00	50.00	37.00	
1x4	56.00	48.00	35.00	
Flat Grain:				
1x3	50.00	47.00	35.00	\$31.00 \$21.00
1x4	49.00	46.00	34.00	29.00 20.00
Add \$2.00 for specified lengths.				
Add \$2.00 for end-matching standard length flooring.				

Flooring (no heart specification), End Matched, Kiln Dried; 2' to 8' Nested

Grade B & Better	Grade C	Grade D	
Edge Grain:			
1x3	\$57.00	\$50.00	\$38.00
1x4	55.00	48.00	36.00
Near Edge Grain:			
1x3	52.00	47.00	35.00
1x4	51.00	46.00	34.00
Flat Grain:			
1x3	42.00	39.00	28.00
1x4	41.00	38.00	27.00

* Standard lengths are 4' to 20' inclusive, and the following percentages of short lengths may be included in all shipments in which the lengths are not specifically restricted:

A and B, 5% 8 and/or 9-foot.
C, 5% 6 and/or 7-foot; 5% 8 and/or 9-foot.

D and No. 2, 5% 4 and/or 5-foot; 5% 6 and/or 7-foot; 5% 8 and/or 9-foot.

No. 3, not to exceed 20% 4 and 6-foot lengths.

TIMBERS, GREEN, ROUGH, S4S OR S2S

No. 1 com. (feet)	No. 2 com. (feet)
8-16, 18, 20,	8-16, 18, 20,
3x3 to 4x4	\$32.00 \$36.00 \$29.00 \$33.00
3x6 to 6x6	30.00 34.00 27.00 31.00
3x8 to 6x8	32.00 36.00 28.00 32.00
8x8	34.00 38.00 30.00 34.00
3x10 to 10x10	35.00 39.00 31.00 35.00
3x12 to 12x12	40.00 44.00 36.00 40.00
Add \$2 for shiplap or T. & G.	
Add \$4 for beveling or outgauging.	
For odd sizes, price at next larger even size.	
Odd or fractional lengths, except 5 ft. and 7 ft., shall be counted and priced as next longest even length.	

RAYON GRAY GOODS

Price Schedule No. 23

The maximum prices for the enumerated constructions of rayon gray goods established by this schedule are applicable to all sales of rayon gray goods whether made by the manufacturer or by any other person. Prices per yard, f. o. b. manufacturer's mill, follow:

Type of Fabric—	Off loom width	Cloth count (Gray)	Warp	Filling	Cents
Viscose Twill	38-in.	112x68	150 den. viscose	150 den. viscose	20
	40½-in.	92x64	150 den. viscose	150 den. viscose	18½
	40½-in.	84x64	150 den. viscose	150 den. viscose	18
	40½-in.	72x46	150 den. viscose	150 den. viscose	14
	42½-in.	108x64	150 den. viscose	150 den. viscose	20½
Viscose Taffeta	39-in.	110x44	150 den. viscose	150 den. viscose	16½
	39-in.	96x44	150 den. viscose	150 den. viscose	15½
	39-in.	88x44	150 den. viscose	150 den. viscose	14½
	39-in.	68x42	150 den. viscose	150 den. viscose	12½
	40½-in.	84x60	150 den. viscose	150 den. viscose	17
Acetate Twill	37-in.	120x72	150 den. acetate	150 den. viscose	22
Taffeta:	42-in.	112x68	150 den. acetate	150 den. viscose	22½
Acetate Pigment	39-in.	110x48	150 den. acetate	150 den. acetate	17½
	40½-in.	92x68	100 den. pig. viscose	150 den. pig. viscose	18
	43½-in.	92x64	100 den. pig. viscose	150 den. pig. viscose	18½
	40½-in.	72x56	150 den. pig. viscose	150 den. pig. viscose	15½
Viscose Satin	40-in.	140x64	100 den. viscose	150 den. viscose	22
	40-in.	140x56	100 den. viscose	150 den. viscose	21
	40-in.	110x48	150 den. viscose	150 den. viscose	17
	42½-in.	180x72	150 den. viscose	150 den. viscose	28½

Spun rayon:

	Off loom width	Cloth count	Warp	Filling	Cents
Twill	40½-in.	128x60	30 s-l spun viscose	30 s-l spun viscose	19½
Challis	40½-in.	68x72	30 s-l spun viscose	30 s-l spun viscose	13½
Oneway Flake	40½-in.	68x44	30 s-l spun viscose	18 s-l av. spun flake viscose	14
Poplin	40½-in.	104x44	30 s-l spun viscose	14 s-l spun viscose	18½
File Challis	41-in.	66x38	30 s-l spun viscose	14 s-l spun viscose	14½
10% Blend	41-in.	66x38	30 s-l spun 10% acet.	14 s-l spun 10% acet.	15
20% Blend	42½-in.	52x36	14 s-l spun 20% acet.	14 s-l spun 20% acet.	17½
30% Blend	40-in.	60x52	20 s-l spun 30% acet.	20 s-l spun 30% acet.	18½
			70% visc.	70% visc.	

Types of Fabric—	Reed width	Cloth Count	Warp	Combined and twisted	Filling	Cents
		Ends in loom x Picks off loom				
2-ply Alpaca	48-in.	44x36	150 den. acetate	150 den. acetate	30	
"Magic Hour" type	48-in.	54x44	150 den. acetate	150 den. acetate	34½	
"Cynara" type	47-in.	52x40	150 den. acetate	100 den. viscose	32	
"Tricolido" type	48-in.	44x38	150 den. acetate abraded	100 den. viscose	31½	
"Mock Roman" type	47-in.	52x46	150 den. acetate	150 den. acetate	29½	
crepe			crepe twist	crepe twist		
100 den. viscose			100 den. acetate	200 den. acetate		
			crepe twist			

Type of Fabric—	Off loom width	Cloth count (Gray)	Warp	Filling	Cents
		Ends in loom x Picks off loom			
Acetate Satin	42-in.	200x72	75 den. acetate	100 den. acetate	25½
	42-in.	180x72	75 den. acetate	100 den. acetate	24½
	42-in.	180x64	75 den. acetate	120 den. acetate	24
	42-in.	225x90	55 den. multi-filament acetate	75 den. multi-filament acetate	27½
Acetate Taffeta	42-in.	180x60	75 den. acetate	150 den. acetate	23½
French crepe	41-in.	104x72	100 den. multi-filament pigment viscose	150 den. multi-filament viscose voile twist	23½

Types of Fabric—	Reed width	Cloth Count	Warp	Combined and twisted	Filling	Cents
		Ends in loom x Picks off loom				
Crepe:						
Acetate warp	45-in.	110x64	120 den. acetate	100 den. viscose	27	
	45-in.	135x64	100 den. acetate	100 den. viscose	28½	
	48-in.	90x48	150 den. acetate	150 den. viscose	23½	
All-Viscose	44-in.	150x76	75 den. pig. viscose	75 den. viscose	29	
	45-in.	114x68	100 den. multi-filament pigment viscose	100 den. viscose	27½	
			crepe twist	crepe twist		

Sheers:	Off-loom Ends x Picks	Warp	Filling	Cents
Cuprammonium triple-sheer	46-in.	104x72	75 den. cupr. crepe twist	75 den. cupr.
Viscose Cuprammonium triple-sheer	46-in.	104x72	75 den. vis. crepe twist	25½
	48-in.	104x72	75 den. cupr. crepe twist	28
Viscose triple-sheer	48-in.	104x72	75 den. vis. crepe twist	26½
Viscose georgette	50-in.	80x72	75 den. vis. crepe twist	28

Animal Hair

Price Schedule No. 24

F. O. B. Point of Shipment

(a) Washed cattle tail hair and processed winter hog hair:

Washed cattle tail hair (10% moisture content basis) .....	.45c per lb.
Processed winter hog hair (10% moisture content basis) .....	.08c per lb.

(b) Maximum prices for coil dried winter hog hair:

Coil dried winter hog hair (10% moisture content basis).....	\$60 per ton
--	--------------

The maximum prices are gross prices before discounts of any nature and include all commissions. They are not applicable to washed cattle tail hair, processed winter hog hair, or coil dried winter hog hair imported from a foreign country.

FATS, OILS, AND THEIR PRODUCTS

Schedule No. 25

This schedule eliminates certain speculative and inflationary price practices with respect to fats and oils and their products. It prohibits:

1. Buying or selling such products for the purpose of reselling them at a profit without either (a) further processing them, or (b) performing some other recognized function in the distribution or manufacture thereof.

2. Making agreements or contracts to purchase or sell such products (other than crude, imported or fish oil) to be delivered more than 45 days after the date of contract or agreement, except that (a) any purchase or sale of a futures contract made on a commodity exchange, or (b) any purchase or sale by, or on behalf of, or at the direction of, the United States or any department or agency thereof, is not so limited as to delivery.

3. Guarantees against price declines, except for products in transit to distributors or constituting a part of the distributors' stocks.

4. Refusal to confirm an acceptance obtained by a broker or agent, where there is reason to believe that the unconfirmed acceptance will be reported to the trade as a firm sale.

5. Overbuying or overstocking for speculative purposes or to evade the normal manufacturing or distributing process.

ANTHRACITE COAL

Price Schedule No. 27— Revoked Sept. 18, 1941

DOUGLAS FIR LUMBER

Price Schedule No. 26 (Amended as of Nov. 10, 1941)

Prices f.o.b. mill, per M feet board measure

NO. 1 DIMENSION, GREEN, ROUGH OR S4S A. L. S.

	R/L 6/20-ft.	6-ft.	8-ft.	9-ft.	10-ft.	12-ft.	14-ft.	16-ft.	18-ft.	20-ft.	22/24-ft.	Add for dry
2x3	\$28.50	\$21.00	\$27.00	\$30.50	\$29.00	\$29.00	\$31.50	\$31.50	\$31.50	\$31.50	\$35.00	\$3.50
2x4	28.50	21.00	28.50	29.00	28.00	28.50	29.50	29.50	29.50	29.50	32.00	3.50
2x6	28.50	21.00	26.50	27.00	28.50	28.50	29.00	29.00	29.00	29.00	31.00	3.50
2x8	27.50	20.00	26.00	27.00	27.50	27.50	27.50	27.50	27.50	27.50	29.50	3.50
2x10	27.50	20.00	26.00	27.00	28.00	28.00	28.50	28.50	28.50	28.50	30.50	4.00
2x12	27.50	20.00	26.00	27.00	28.00	28.00	28.50	28.50	28.50	28.50	30.50	5.50

Grade spreads: No. 2 Green all widths and lengths, 20-ft. and shorter, \$2 per 1,000 feet less than No. 1 Green of the same width and length. No. 3 20-ft. and shorter, 2x3, 2x4, 2x6 and 2x8 Green \$8 per 1,000 feet, and 2x10 and 2x12 Green \$9 per 1,000 feet, less than No. 1 Green of the same width and length. No. 2 Dry, all widths and lengths, 20-ft. and shorter, \$4 per 1,000 feet less than No. 1 Dry of the same width and length. No. 3 Dry, 20-ft. and shorter, 2x3, 2x4, 2x6 and 2x8, \$10 per 1,000 feet, and 2x10 and 12-in., \$11 per 1,000 feet, less than No. 1 Dry of the same width and length.

For dimension surfaced 1/4-in. off, add \$1 per 1,000 feet to the price for the same grade, width and length.

For No. 1, permitting up to 15% No. 2, deduct 50c per 1,000 feet from the No. 1 price of the same width and length.

For working to shiplap, center matched, or dressed and matched, add \$2 per 1,000 feet, droppings to be included at grade differential.

For rough dry, add \$1 per 1,000 feet to surfaced dry price.

For ripping and resawing, not diagonal or tapered, add for 2x4, \$2.50, and for 2x6 and wider \$1.50 per 1,000 feet.

PLANK AND TIMBERS, GREEN, ROUGH OR S4S, A. L. S.

	No. 1			Sel. Merch.			Sel. Str.			Sel. Str.		
	20-ft. & Shtr.	22-24	26-32	34-40	20-ft. & Shtr.	22-24	26-32	34-40	20-ft. & Shtr.	22-24	26-32	34-40
3x3	\$34.00	\$36.50	\$39.50	....	\$38.00	\$40.50	\$42.50	....	\$40.00	\$42.50	\$45.50	....
3x4	32.50	35.50	38.50	....	36.50	39.50	41.50	....	38.50	41.50	44.50	....
3x6 and 3x8	31.00	33.00	34.50	\$37.50	35.00	37.00	38.50	\$41.50	37.00	39.00	40.50	\$43.50
3x10 and 3x12	30.50	32.50	34.00	36.50	33.50	35.50	37.00	39.50	35.50	37.50	39.00	41.50
4x4	32.00	34.00	36.00	....	36.00	38.00	40.00	....	38.00	40.00	42.00	....
4x6 and 4x8	31.00	33.00	34.50	37.50	35.00	37.00	38.50	41.50	37.00	39.00	40.50	43.50
4x10 and 4x12	30.50	32.50	34.00	37.00	33.50	35.50	37.00	40.00	35.50	37.50	39.00	42.00
6x6 and 6x8	30.50	32.00	33.50	34.00	34.50	36.00	37.50	40.50	36.50	38.00	39.50	42.50
8x8	30.50	32.00	33.00	33.50	34.50	36.00	37.00	40.00	36.50	38.00	39.50	42.00

No. 1

	No. 1			Sel. Merch.			Sel. Str.		
	20-ft. & Shtr.	22-30	32-40	20-ft. & Shtr.	22-30	32-40	20-ft. & Shtr.	22-30	32-40
6x10 and 6x12	\$29.50	\$30.50	\$31.00	\$31.50	\$32.50	\$33.00	\$33.50	\$34.50	\$35.50
8x10 and 8x12	29.50	30.50	31.00	31.50	32.50	33.00	33.50	34.50	35.50
10x10 and 10x12	29.50	31.50	30.50	31.50	33.50	34.00	33.50	35.50	36.50
12x12	29.50	31.50	30.50	31.50	33.50	34.00	33.50	35.50	36.50

For specified lengths in select merchantable and select structural grades, add \$2 per 1,000 feet.

For No. 1, permitting up to 15 per cent of No. 2, deduct 50c per 1,000 feet from the No. 1 price of the same width and length.

For surfacing 1/4-inch off, add \$1 per 1,000 feet to the price for the same grade, with and length.

NO. 1 BOARDS AND SHIPLAP, GREEN, SURFACED A. L. S.

R/L	6/20 ft.	6 ft.	8 ft.	10 ft.	12 ft.	14 ft.	16 ft.	18 ft.	20 ft.	Add for dry
1x4	\$27.00	\$27.00	\$27.00	\$27.00	\$27.00	\$28.50	\$29.50	\$29.50	\$29.50	\$4.00
1x6	27.00	27.00	27.00	27.00	27.00	28.50	29.50	29.50	29.50	4.00
1x8	27.00	27.00	27.00	27.00	27.00	28.50	29.50	29.50	29.50	4.00
1x10	26.00	26.00	26.00	26.00	26.00	27.50	28.50	28.50	28.50	4.00
1x12	28.00	28.00	28.00	28.00	29.50	30.50	30.50	30.50	30.50	4.00

Grade Spread: No. 2 dry or green, \$2 per 1,000 feet less than No. 1 of same size and length; No. 3 dry, \$8 per 1,000 feet less than No. 1 of same size and length.

For working to pattern, add \$2 per 1,000 feet. For rough random length, add \$1.50 to R/L surfaced prices. For No. 1, permitting up to 15 per cent of No. 2, deduct \$50c per 1,000 feet from the No. 1 price of the same width and length.

For surfacing 1/4-inch off, add \$1 per 1,000 feet to the price for the same grade, width and length.

FLOORING, R/L*

1x3; 1x4 V.G. B&Btr—	\$60.00	C—\$55.00	D—\$45.00
1x3; 1x4 F.G. B&Btr—	\$45.00	C—43.00	D—38.00
DROP SIDING, R/L*			
1x6 M.G. B&Btr—	\$50.00	C—\$48.00	D—\$40.00
CEILING, R/L*			
5x4" M.G. B&Btr—	\$37.00	C—\$35.00	D—\$28.00
1x4 M.G. B&Btr—	45.00	C—43.00	D—38.00
1x6 M.G. B&Btr—	50.00	C—48.00	D—40.00

* Regular Loading Random Lengths is as follows: B & Better and C Grades, 4 feet, 5 feet, 3 per cent; 6 feet, 7 feet, 7 per cent; 8 to 20 feet, 90 per cent. D Grade, 4 feet, 6 feet, 7 feet, 20 per cent; 8 to 20 feet, 80 per cent.

For specified lengths, 12 feet, add \$2.00; 14 feet, add \$3.00; 16-18 and 20 feet, add \$5.00.

Factory and Door Stock

Factory select	....	\$45.00
No. 1 shop	....	35.00
No. 2 shop	....	25.00

- (b) For mixed car, mixed cargo or mixed truck shipments \$2 additional per 1,000 feet board measure may be charged. A mixed car or mixed cargo shipment consists of four or more items as hereinafter defined of at least 1,000 board feet each. A mixed truck shipment consists of four or more items of at least 250 feet each. For the purpose of this definition the following classifications of lumber of any different species shall constitute an item:
1. Boards, shiplap or strips.
 2. Dimension.
 3. Planks and small timbers, not exceeding 4 inches in thickness.
 4. Large timbers, exceeding 4 inches in thickness.
 5. Flooring.
 6. Siding.
 7. Ceiling or partition.
 8. Finish.

9. Rough clears,

10. Steppings.
11. Mouldings.
12. Silo stock.
13. Gutter.
14. Corn cribbing.
15. Lath.
16. Casing and base.

(c) For export sales, an addition of not more than \$3.50 per 1,000 feet board measure may be charged for the services of switching, unloading at the dock, tallying, marking and dock insurance.

(d) A delivered price in excess of the maximum f.o.b. mill prices set forth in (a) hereof may be charged, consisting of such maximum prices plus actual transportation costs to the extent that such costs are paid by the seller. In computing such actual transportation costs, the parties may adopt the practice of charging a sum equivalent to the one-quarter of a dollar nearest to such actual transportation costs. In addition, they may adopt estimated average weights of Douglas fir per thousand feet board measure.

ETHYL ALCOHOL

Price Schedule No. 28

	Per gallon 188-190 proof tank cars, Eastern territory
CD12, CD13, CD14, f.o.b. shipping point.....	.325
SDI, SD3A, SD23A, at works .....	.275
SD2B, at works .....	.245
SD12A, at works .....	.255
SD23G, at works .....	.305
SD23H, at works .....	.280
Proprietary name CDA, f.o.b. shipping point...	.325
Proprietary name solvent, at works .....	.285
Additional for quantities less than tank cars, containers included:	
Drums, CL .....	.07
19 Drums—LCL .....	.09½
1-18 drums .....	.12½
Barrels, CL .....	.11
19 Barrels—LCL .....	.13
1-18 barrels .....	.16
Additional in Pacific territory (Washington, Oregon, California, Idaho, Nevada, Utah, Arizona) .....	.04
Additional to determine maximum price of anhydrous ethyl alcohol (200 proof).....	.03

Waste Paper

Price Schedule No. 30

(Amended Oct. 29, 1941)

Applies only to waste paper sold east of the Rocky Mountains. An amount not in excess of \$1 per ton may be added if the waste paper is loaded on freight cars.

	Per short ton f.o.b. point of shipment loaded on trucks
No. 1 mixed paper.....	\$13.00
Super-mixed paper	14.00
No. 1 baled news	15.00
Overissue news	17.00
Old corrugated containers.....	16.50
Old kraft corrugated containers.....	27.00
New corrugated cuttings.....	18.00
Box board cuttings	14.50
White blank news.....	33.00
Extra Manilas	37.00
New Manila envelope cuttings.....	53.00
One cut new Manila envelope cuttings.....	57.50
No. 1 hard white shavings, unruled.....	57.50
No. 1 hard white shavings, ruled.....	50.00
Hard white envelope cuttings.....	62.50
One cut hard white envelope cuttings.....	67.50
No. 1 soft white shavings.....	50.00
One cut soft white shavings.....	57.50
Miscellaneous soft white shavings.....	43.00
No. 1 fly leaf shavings.....	33.50
No. 2 fly leaf shavings.....	22.50
No. 1 groundwood fly leaf shavings.....	25.00
No. 2 mixed colored groundwood shavings.....	18.00
Mixed colored shavings.....	15.00
No. 1 heavy books and magazines.....	31.50
Mixed books	20.50
Overissue magazines	33.50
No. 1 mixed ledger (colored ledger).....	37.50
No. 1 white ledger.....	43.50
No. 1 assorted kraft (old kraft).....	35.00
Triple sorted No. 1 brown soft kraft.....	50.00
Mixed kraft envelope and/or bag cuttings	55.00
Kraft envelope cuttings.....	65.00
New 100% kraft corrugated cuttings.....	49.00

BY-PRODUCT COKE

Price Schedule No. 29

	Foundry Coke	
	Per net ton f.o.b. Oven Plant	Delivered within Switching Districts
Location of Oven Plant		
Alabama	\$8.50	
Chicago	11.50	\$12.25
Ashland, Ky.	10.00	
Detroit	11.75	12.25
Kearny, N. J.	12.15	
Buffalo	11.75	12.50
Ironton, Ohio	10.00	
Painesville, Ohio	11.25	
Portsmouth, Ohio	10.00	
Erie, Pa.	11.75	12.25
Philadelphia	11.75	12.38
Chattanooga	9.00	
Fairmont, W. Va.	10.00	
Milwaukee	12.25	
St. Louis .....	.....	12.02
Indianapolis .....	.....	12.00
Terre Haute .....	.....	12.00
Cincinnati .....	.....	11.75
Cleveland .....	.....	12.30
St. Paul-Minneapolis .....	.....	14.00

Exception: Maximum delivered price in New England area is \$13.75 per net ton, less 15 cents per net ton discount for cash, 10 days.

Alternative method of computing maximum price is provided for shipments from Swedeland, Pa.

BLAST FURNACE COKE. Maximum price, f.o.b. oven plant, shall be 75 cents per net ton above the weighted average of such coke delivered from each oven plant during the first quarter of 1941.

Acetic Acid

Price Schedule No. 31

I. Acetic Acid in Tank Cars

The following maximum prices are established for glacial acetic acid (99.5% or over), and for weaker acetic acid of commercial grade in terms of 100% acid content:

Wood Origin—
\$7.25 per 100 pounds delivered.*
Other Origin—
\$6.25 per 100 pounds delivered.

II. Acetic Acid in Containers, Carload Lots

A. The following maximum prices, f.o.b. producers' shipping points, are established for concentration of technical and pure acetic acid, of any origin, for carload quantities, in barrels or drums:

Technical ***		
28%	\$3.18 per 100 lbs.	
56%	5.18 " "	
70%	6.19 " "	
80%	6.91 " "	
84%	7.20 " "	
Glacial	8.45 " "	

** Freight in excess of 32c per 100 pounds may be charged to buyer.

Pure ***		
30%	\$4.23 per 100 lbs.	
36%	4.61 " "	
60%	7.17 " "	
90%	8.70 " "	
U. S. Pharmacopoeia	10.25 " "	
Chemically Pure	13.50 " "	

*** Specifically designated percentages include all approximations thereof.

B. Maximum prices, for carload quantities, in carboys and cases, are determined by adding a differential of 50c per 100 lbs. to the maximum prices established in subparagraph A of this paragraph.

III. Acetic Acid in Containers, Less Carload Lots

Maximum prices, for less than carload quantities, in the containers listed below, are determined by adding the following differentials to the maximum prices established in subparagraph A of paragraph II hereof.

For barrels or drums, less carload—

25c per 100 lbs.

For carboys and cases, less carload—

75c per 100 lbs.

Wood Alcohol

Price Schedule No. 34

The following maximum prices are established for wood alcohol:

I. Tank Cars

East of the Mississippi River

	Per gallon delivered
Denaturing grade	60c
Pure methyl alcohol	60c
* 95 per cent methyl alcohol.....	60c
* 97 per cent methyl alcohol.....	60c

* Specifically designated.

West of the Mississippi River

Maximum prices for tank car quantities in territory west of the Mississippi River are determined by adding 3c per gallon to the maximum prices established above for tank cars in territory east of the Mississippi River.

II. Drums and Other Containers, Carload Quantities

Maximum prices for drums and other containers, in carload quantities, in territory east or west of the Mississippi River are determined by adding 6c per gallon to the maximum prices established for tank cars in the respective territory by Paragraph I of this Appendix.

III. Drums and Other Containers, Less Than Carload Quantities

Maximum prices for drums and other containers, in less than carload quantities, in territory east or west of the Mississippi River, are determined by adding 16c per gallon to the maximum price established for tank cars in the respective territory by paragraph 1 of this Appendix.

PAPERBOARD

SOLD EAST OF THE ROCKY MOUNTAINS

Price Schedule No. 32

Maximum Prices for Paperboard Used in the Manufacture of Folding Paper Boxes and Set-up Cartons Set-up Boxboards

(No. 1 Gage List—Reg. 50s to 90s, incl.)

Max. base price per ton (2000 lbs.)	Max. differential price applying to max. base price		
	1 to 3 Tons	Over 3 Less 10	10 Tons or Over
Plain chip... \$45.00	+ 5.00	+ 2.50	+ Base
News vat lined chip ... 45.00	+ 6.50	+ 4.00	+ 1.50
Filled news... 45.00	+ 8.00	+ 5.50	+ 3.00
Solid news... 45.00	+10.00	+ 7.50	+ 5.00
White vat lined ... 45.00	+20.00	+17.50	+15.00
Mounting board ... 45.00	+ 8.00	+ 5.50	+ 3.00
Tube and can stock ... 45.00	+ 7.50	+ 5.00	+ 2.50

Folding Boards

(No. 2 Gage List—Reg. 50s and 90s, incl.)

Max. base price per ton (2000 lbs.)	Max. differential price applying to max. base price		
	1 to 3 Tons	Over 3 Less 10	10 Tons or Over
Single manila lined, jute-mist gray, tan, green lined and suit box... \$60.00	+ 5.00	+ 2.50	+ Base
Bleached manila lined. 60.00	+ 7.50	+ 5.00	+ 2.50
Semi-bending and creasing chip ... 60.00	- 7.50	-10.00	-12.50
Fall bending chip ... 60.00	- 5.00	- 7.50	-10.00

White Patent Coated News

(No. 6 Gage List)

Max. base price per ton (2000 lbs.)	Max. differential price applying to max. base price		
	1 to 3 Tons	Over 3 Less 10	10 Tons or Over
No. 1 white—			
Single .020 and heavier ... \$75.00	+ 5.00	+ 2.50	+ Base
Single .018... 75.00	+ 7.50	+ 5.00	+ 2.50
Single .016... 75.00	+10.00	+ 7.50	+ 5.00
Single .015... 75.00	+12.50	+10.00	+ 7.50
Single .014... 75.00	+15.00	+12.50	+ 10.00
Double .020 and heavier ... 75.00	+27.50	+25.00	+22.50
Double .018... 75.00	+32.50	+30.00	+27.50
Double .016... 75.00	+37.50	+35.00	+32.50
Double .015... 75.00	+40.00	+37.50	+35.00
Double .014... 75.00	+42.50	+40.00	+37.50

Additional Differentials Applying to All Grades

Regular 35s to 39s...	+ \$5.00
Regular 40s to 49s...	+ 2.50
Regular 91s to 100s...	+ 2.50
Regular 101s to 120s...	+ 5.00
Silicating (per side)...	+ 2.50
Pasting 35s to 15s...	+ 7.50
Pasting 14s to 1/2-in. thick...	+12.50
Trimming (per side)...	+ 1.00
Gloss ink ...	+ 2.50

Maximum Prices for Paperboard Used in the Manufacture of Corrugated and Solid Fiber Boxes

Container Liners—	Price per M. sq. ft.
.016 42 lb. Fourdrinier Kraft...	\$1.26
.016 47 lb. Fourdrinier Kraft...	1.41
.016 49 lb. Fourdrinier Kraft...	1.50
.016 50 lb. Fourdrinier Kraft...	1.50
.016 52 lb. Fourdrinier Kraft...	1.56
.016 56 lb.-150 lb. Test Cylinder Kraft.	1.69

Price per M. sq. ft.

.016 56-58 lb.-100 lb. Test Natural Cylinder Kraft	1.82
.016 56-58 lb.-100 lb. Test Filled Cylinder Kraft	1.82
.016 52 lb.-100 lb. Test Yellow Fourdrinier Kraft	1.76
.016 56 lb.-125 lb. Test Yellow Cylinder Kraft	1.89
.016 56 lb. Chipboard	1.26
.016 64 lb. Jute	1.92

Liners Heavier Than .016

.030 100 lb. Jute	\$3.00
.030 110 lb. Jute	3.30
.030 96 lb. Cylinder Kraft	3.12
.030 96 lb. Yellow Cylinder Kraft	3.24
.030 90 lb. Fourdrinier Kraft	2.70
.030 104 lb.-250 lb. Test Cylinder Kraft	3.38
.035 110 lb. High Test Cylinder Kraft	3.85

Liners Lighter Than .016

.012 33 lb. Kraft	.99
.012 38 lb. Kraft	1.14
.012 48 lb.-50 lb. Jute	1.50
.010 30 lb.-32 lb. Kraft	1.04

Corrugating Grades

.009 32 lb. Strawboard	.96
.009 26 lb. Fourdrinier Kraft	.78
.009 26 lb. Chestnut	.78
.009 26 lb. Pinewood	.78
.009 26 lb. Chip	.62
.009 25-30 lb. "Bogus" corrugating material	.90
.009 26 lb. Canadian (sulphite and ground wood)	.78

All of the above maximum prices are for the respective grades and tonnages delivered to the consumer. Billing may be f.o.b. point of shipment with freight allowed to point of destination.

CARDED COTTON YARNS

Price Schedule No. 33

The following maximum prices are for white carded yarns of all twists from knitting to warp twist, put up on regular-sized cones or tubes or in skeins. Prices are based on the cotton spot price (U. S. Department of Agriculture, Agricultural Marketing Service, 15/16-inch cotton on ten designated spot markets) for the preceding business day. Prices are freight prepaid to purchaser's place of business, except that an extra charge may be made to the extent that transportation cost exceeds 1c per pound. These are gross prices, before deduction of any discounts, and including all commissions.

COTTON SPOT PRICES—CENTS PER POUND

Yarn Number	14.21 to 14.65	14.66 to 15.09	15.10 to 15.54	15.55 to 15.98	15.99 to 16.43	16.44 to 16.87	16.88 to 17.32	17.33 to 17.76	17.77 to 18.21	18.22 to 18.65	18.66 to 19.10	19.11 to 19.54	19.53 to 19.99
Single—													
8s	33	33.5	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39
10s	33.5	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39	39.5
12s	34	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39	39.5	40
14s	34.5	35	35.5	36	36.5	37	37.5	38	38.5	39	39.5	40	40.5
16s	35	35.5	36	36.5	37	37.5	38	38.5	39	39.5	40	40.5	41
18s	35.5	36	36.5	37	37.5	38	38.5	39	39.5	40	40.5	41	41.5
20s	36	36.5	37	37.5	38	38.5	39	39.5	40	40.5	41	41.5	42
24s	37	37.5	38	38.5	39	39.5	40	40.5	41	41.5	42	42.5	43
26s	38	38.5	39	39.5	40	40.5	41	41.5	42	42.5	43	43.5	44
30s	40	40.5	41	41.5	42	42.5	43	43.5	44	44.5	45	45.5	46
36s	43	43.5	44	44.5	45	45.5	46	46.5	47	47.5	48	48.5	49
38s	44	44.5	45	45.5	46	46.5	47	47.5	48	48.5	49	49.5	50
40s	45	45.5	46	46.5	47	47.5	48	48.5	49	49.5	50	50.5	51
50s	53	53.5	54	54.5	55	55.5	56	56.5	57	57.5	58	58.5	59
Plied—													
8s	37	37.5	38	38.5	39	39.5	40	40.5	41	41.5	42	42.5	43
10s	37.5	38	38.5	39	39.5	40	40.5	41	41.5	42	42.5	43	43.5
12s	38	38.5	39	39.5	40	40.5	41	41.5	42	42.5	43	43.5	44
14s	38.5	39	39.5	40	40.5	41	41.5	42	42.5	43	43.5	44	44.5
16s	39	39.5	40	40.5	41	41.5	42	42.5	43	43.5	44	44.5	45
18s	39.5	40	40.5	41	41.5	42	42.5	43	43.5	44	44.5	45	45.5
20s	40	40.5	41	41.5	42	42.5	43	43.5	44	44.5	45	45.5	46
24s	41	41.5	42	42.5	43	43.5	44	44.5	45	45.5	46	46.5	47
26s	42	42.5	43	43.5	44	44.5	45	45.5	46	46.5	47	47.5	48
30s	44	44.5	45	45.5	46	46.5	47	47.5	48	48.5	49	49.5	50
36s	48	48.5	49	49.5	50	50.5	51	51.5	52	52.5	53	53.5	54
38s	49	49.5	50	50.5	51	51.5	52	52.5	53	53.5	54	54.5	55
40s	50	50.5	51	51.5	52	52.5	53	53.5	54	54.5	55	55.5	56
50s	58	58.5	59	59.5	60	60.5	61	61.5	62	62.5	63	63.5	64

COTTON CLOTH—SLIDING SCALE

Price Schedule No. 35

Table I. Premiums for Special Manufacturing Processes

In addition to the maximum prices listed in the tables, the following premiums for special manufacturing processes may be charged. None of these premiums are applicable, however, to osnaburgs or to print cloths of Class B. or C; to any fabrics excepted below; or to any fabric, which in its standard construction, is normally manufactured by means of the process on which such premium is predicated.

Feeler motion (applies only to sheetings and Class A print cloths), 1c per lb.

Weaves (except on twists and drills of the types and classes listed in Table III-A) which, including selvage, require 5 cams, $\frac{1}{4}$ c per yd.; 6 or more cams, $\frac{1}{2}$ c per yd.

Dobby looms: Weaves requiring 16 harnesses or less,

$\frac{1}{4}$ c per yd.; more than 16 harnesses, $\frac{1}{2}$ c per yd.

Fancy draw: for ply cords, bunched ends, skip dents, double draw (2 ends or more weaving as one), reverse twist warp stripes, or any other novelty draw, or for any combination of the above, $\frac{1}{2}$ c per yd.

Each extra beam, $\frac{1}{2}$ c per yd.

Hard twist: Warp yarn, where turns per inch equal $5\frac{1}{4}$ or more times the square root of yarn size, $\frac{1}{2}$ c per yd.; Filling yarn, where turns per inch equal $4\frac{3}{4}$ or more times the square root of yarn size, $\frac{1}{2}$ c per yd.

Clipping, 1c per yd.

Slubs: cloth with over 52 picks per inch, 3c per lb.; 52 picks per inch and under, 2c per lb.

Table II. Print Cloth Yarn Group

Spot Cotton Prices: (cents per lb.)	14.24 to 14.67	14.68 to 15.11	15.12 to 15.54	15.55 to 15.98	15.99 to 16.42	16.43 to 16.85	16.86 to 17.29	17.30 to 17.73	17.74 to 18.17	18.18 to 18.60	18.61 to 19.04	19.05 to 19.48
Print cloth:		Cents per lb.										
Class A	41.00	41.50	42.00	42.50	43.00	43.50	44.00	44.50	45.00	45.50	46.00	46.50
Class B	42.50											
Class C	44.00											
Carded Broadcloth:												
Class A	41.00											
Class B	44.00											
Class C	48.00											
Class D	53.00											
Pajama Checks:												
Class A	43.00											
Class B	42.50											
Carded Poplins:												
Class A:												
1	41.00											
2	40.00											
3	39.00											
Class B:												
1	43.00											
2	42.00											
3	41.00											
Class C:												
1	48.00											
2	46.00											
3	44.00											
Carded Piques:												
Class A	45.00											
Class B	48.00											
Class C	51.00											
Three-Leaf Twills:												
Class A	38.00											
Class B	39.00											
Class C	42.00											
Class D	43.00											
Class E	43.50											

For each type and class of cloth in this table, add $\frac{1}{2}$ c per lb. for each increase of 43.7 points in the price of raw spot cotton, as indicated in the example (Print cloth, Class A) above.

Premiums up to 5c allowed for narrow widths.

Key to Types and Classes

Print Cloth (under 42" in width), warp 28s to 32s, filling 36s to 45s. Average not less than 33s. Class A, 160 to 100 threads per sq. in.; Class B, 99 to 72 threads; Class C, 71 threads and under.

Carded Broadcloth (under 42" in width). Class A, warp yarns not less than 28s, 166 threads per sq. in. and under; Class B, warp yarns not less than 28s, 167 to 174 threads per sq. in.; Class C, warp yarns not less than 34s, 175 to 189 threads per sq. in.; Class D, warp yarns not less than 39s, 190 to 200 threads per sq. in.

Pajama Checks (under 42" in width) Class A, 160 threads per sq. in. and over; Class B, 159 threads per sq. in. and under.

Carded Poplins (under 42" in width). Class A, warp yarns 29s to $31\frac{1}{2}$ s, 3700 to 4000 warp ends—A1, 3.50 yds per lb. and over! A2, 3.49 to 3.01 yds. per lb.; A3, 3 yds. per lb. and under.

Class B, warp yarns 29s to $31\frac{1}{2}$ s, 4001 to 4200 warp ends—B1, 3.50 yds. per lb. and over; B2, 3.49 to 3.01 yds. per lb.; B3, 3 yds. per lb. and under.

Class C, warp yarns 34s to 36s, warp ends 4300 and over—C1, 3.50 yds. per lb. and over; C2, 3.49 to 3.01 yds. per lb.; C3, 3 yds. per lb. and under.

Carded Piques (under 42" in width), warp 29s to $31\frac{1}{2}$ s. Class A, 152 to 176 threads per sq. in., 3.70 yds. per lb. and over; Class B, 177 to 199 threads per sq. in., 3.40 to 3.69 yds. per lb.; Class C, 200 to 210 threads per sq. in., 3 to 3.39 yds. per lb.

Three-Leaf Twills (under 42" in width). Class A, 140 to 151 threads per sq. in., 2.45 to 2.89 yds. per lb.; Class B, 132 to 152 threads, 2.90 to 3.89 yds. per lb.; Class C, 140 to 148 threads, 3.90 to 4.10 yds. per lb.; Class D, 140 to 148 threads, 4.11 to 4.39 yds. per lb.; Class E, 124 to 147 threads, 4.40 to 5.20 yds. per lb.

Table III. Sheetng Yarn Group

Sheetings:	33.50	34.00	34.50	35.00	35.50	36.00	36.50	37.00	37.50	38.00	38.50	39.00
Class A	33.50											
Class B	34.50											
Class C	36.00											
Drills:												
Class A	32.00											
Class B	33.00											
Class C	34.00											
Class D	35.00											
Class E	36.00											
Three-leaf Jeans	38.50											
Four-leaf Twills:												
Class A	32.50											
Class B	33.50											
Class C	36.00											
Class D	36.50											
Osnaburgs:												
Class A	27.00											
Class B	30.00											

For each type and class of cloth in this table, add $\frac{1}{2}$ c per lb. for each increase of 43.7 points in the price of raw spot cotton, as indicated in the example (Sheetings, Class A) above.

Key to Types and Classes

Sheetings (under 42" in width). Class A, yarns up to 15s; Class B, yarns 16s to 21s; Class C, yarns above 21s.

Drills (under 42" in width), 95 to 115 threads per sq. in. Class A, 2 yds. per lb. and under; Class B, 2.01 to 2.50 yds. per lb.; Class C, 2.51 to 3 yds. per lb.; Class D, 3.01 to 3.50 yds. per lb.; Class E, 3.50 yds. per lb. and over.

Three-leaf Jeans (under 42" in width)—All.

Four-leaf Twills (under 42" in width), 115 to 135 threads per sq. in. Class A, 1.50 yds. per lb. and under; Class B, 1.51 to 2 yds. per lb.; Class C, 2.01 to 2.85 yds. per lb.; Class D, 2.86 yds. per lb. and over.

Osnaburgs (under 42" in width). Class A, yarns up to 9s; Class B, yarns above 9s.

Differentials shown on following page.

DIFFERENTIALS APPLYING TO TABLE III

Class C Sheetings. For thread count per sq. in.: 130 to 139, add 1c; 140 to 159, add 2½c; 160 and over, add 4c.

Drills (All Classes). For thread count per sq. in.: 94 and under, deduct ½c; 116 to 124, add ½c; 125 and over, add 1c.

For herringbone weaves: Reverse twist, add 1¼c; plain, add ½c.

Three-leaf Jeans. For herringbone weaves: Reverse twist, add 1½c; plain, add ¾c.

Four-leaf Twills (All Classes). For thread count per sq. in.: 114 and under, deduct ½c; 136 and over, add ½c.

For herringbone weaves: Reverse twist, add 1¼c; plain, add ½c.

TABLE IV. DENIMS (All Shades and Colors)
(28 inches or wider)

Mill finish:	Cotton Spot Price—Cents per Pound										
	14.15 to 14.60	14.61 to 15.06	15.07 to 15.52	15.53 to 15.98	15.99 to 16.44	16.45 to 16.90	16.91 to 17.36	17.37 to 17.82	17.83 to 18.28	18.29 to 18.74	18.75 to 19.20
	Cents per Yard										
3.50 yards	12.00	12.00	12.25	12.25	12.50	12.75	13.00	13.00	13.25	13.50	13.75
3.00 yards	13.50	13.75	14.00	14.00	14.25	14.50	14.75	14.75	15.00	15.25	15.50
2.60 yards	15.00	15.25	15.50	15.75	16.00	16.25	16.50	16.50	16.75	17.00	17.25
2.45 yards	15.75	16.00	16.25	16.50	16.75	17.00	17.25	17.25	17.50	17.75	18.00
2.40 yards	15.75	16.00	16.25	16.50	16.75	17.00	17.25	17.25	17.50	17.75	18.00
2.30 yards	16.50	16.75	17.00	17.25	17.50	17.75	18.00	18.00	18.25	18.50	18.75
2.20 yards	17.00	17.25	17.50	17.75	18.00	18.25	18.50	18.75	19.00	19.25	19.50
8 oz. (2.00)	18.50	18.75	19.25	19.50	19.75	20.00	20.25	20.25	20.50	21.00	21.25
9 oz. (1.78)	20.75	21.00	21.50	21.75	22.00	22.25	22.50	23.00	23.25	23.50	23.75
Sanforized:											
3.15 yards	14.25	14.25	14.50	14.50	14.75	15.00	15.25	15.25	15.50	15.75	16.25
3.00 yards	14.25	14.25	14.50	14.50	14.75	15.00	15.25	15.25	15.50	15.75	16.25
2.70 yards	15.75	16.25	16.50	16.50	16.75	17.00	17.25	17.25	17.50	17.75	18.00
2.45 yards	17.50	17.75	18.00	18.25	18.50	18.75	19.25	19.25	19.50	19.75	20.00
2.20 yards	18.25	18.50	19.00	19.25	19.50	19.75	20.00	20.25	20.50	20.50	20.75
8 oz. (2.00)	19.75	20.00	20.25	20.50	20.75	21.00	21.25	21.25	21.75	22.00	22.25
9 oz. (1.78)	21.25	21.75	22.25	22.50	22.75	23.00	23.25	23.25	23.50	23.75	24.00
10 oz. (1.60)	23.75	24.00	24.75	25.00	25.25	25.50	25.75	25.75	26.25	26.50	26.75

Maximum prices for denims narrower than 28" shall be proportionate to the width, in relation to the appropriate 28" price shown above.

Maximum prices for denims of intermediate weight shall be determined by interpolation, according to weight. Prices for denims of greater or less weight than those listed,

shall be determined, in proportion to weight, from the maximum price for the heaviest or lightest denim listed.

A premium of ½c per yard may be charged for solid color denims, for striped denims made with 100%-colored filling yarns, and for herringbone weaves.

Maximum prices are discounted for seconds, short lengths, and for payment within 60 days.

TABLE V. COLORED YARN GROUP (Exclusive of denims)
(36 inches or wider)

Carded fine yarn shirting Chambray:	SPOT COTTON PRICE—CENTS PER POUND										
	14.31 to 14.72	14.73 to 15.14	15.15 to 15.56	15.57 to 15.98	15.99 to 16.40	16.41 to 16.82	16.83 to 17.24	17.25 to 17.66	17.67 to 18.08	18.09 to 18.50	18.51 to 18.92
	Cents per Yard										
Mill finish:											
4.85 yards	10.75	10.875	11.00	11.125	11.25	11.375	11.50	11.625	11.75	11.875	12.00
3.90 yards	12.00										12.125
3.20 yards	14.50										
Sanforized:											
3.90 yards	14.50										
3.20 yards	17.25										
Carded coarse yarn shirting Chambray:											
Mill finish: 3.00 yards.....	14.50										
Sanforized: 3.00 yards.....	17.25										
Carded fine yarn shirting coverts:											
Mill finish:											
3.90 yards	12.75										
3.20 yards	15.25										
Sanforized:											
3.90 yards	15.25										
3.20 yards	18.00										
Carded coarse yarn shirting coverts:											
Mill finish: 3.20 yards.....	14.75										
Sanforized: 3.20 yards.....	17.75										
For each type and class of cloth in this table, add ½c per yd. for each increase of 42 points in the price of raw spot cotton, as indicated in the example (Chambray, Mill finish) above.											
Maximum price of Cotton Pants Coverts, Sanforized, 1.65 yards, is 28.30 cents per yd. when spot cotton price is 14.31 to 14.72 cents per pound. Add 0.3 cents per yard for each increase of 42 points in the price of raw spot cotton.											
Maximum prices of fabrics less than 36" in width shall be proportionate to the width, in relation to the appropriate 36" price listed.											
Maximum prices are discounted for seconds, short lengths, and for payment within 60 days.											

Acetone

Price Schedule No. 36

The following maximum prices are established for acetone:

(a) Eastern territory (**).

Tank cars, 7c per pound delivered.

Drums, car-load lots, 8½c per pound delivered, containers included.

Drums, less than car-load lots, 9c per pound delivered, containers included.

(b) Western territory (**).

The maximum prices established for acetone in Western territory are the maximum prices established in paragraph (a) for acetone in Eastern territory, plus ½c per pound.

(**)—When used in this schedule the term "Eastern" territory shall mean the States of New Mexico, Colorado, Wyoming, Montana and all States east thereof, and the term "Western" territory shall mean all other States of the United States.

Butyl Alcohol

Price Schedule No. 37

The following maximum prices are established for normal butyl alcohol:

(A) Eastern territory.**

Tank cars, 10½c per pound delivered.

Drums, carload lots, 11½c per pound delivered, containers included.

Drums, less than carload lots, 12½c per pound delivered, containers included.

(B) Western territory.**

Maximum prices established for normal butyl alcohol in Western territory are the maximum prices established in Pittsburgh. (A) for normal butyl alcohol in Eastern territory plus ½c per pound.

(**) When used in this schedule, the term "Eastern" territory shall mean the States of New Mexico, Colorado, Wyoming and Montana and all States east thereof and the term "Western" territory shall mean all other States of the United States.

GLYCERINE

Price Schedule No. 38

Cents per pound, delivered

A. REFINED GLYCERINE

(1) C. P. glycerine (98% glycerol).....	18½	18¾	19¼
(2) C. P. glycerine (U.S.P. 95% glycerol).....	18	18¾	18¾
(3) Dynamite	18	18¾	18¾
(4) High Gravity.....	18	18¾	18¾
(5) Yellow distilled	18	18¾	18¾

B. CRUDE GLYCERINE

(1) Soap lye (basis 80% glycerol).....	11½	11½	11½
(2) Saponification (basis 88% glycerol) to refiners	12¾	12¾	12¾
(3) Saponification (basis 88% glycerol) for individual uses	12¾	12¾	14¾

Maximum prices of crude glycerine, of glycerol percentages other than those listed above, in tank cars and drums (C-L and LC-L lots) shall be determined at the rate of 1½ cents per pound delivered for glycerine of 80% glycerol content.

Maximum prices established for refined glycerine (A) are applicable to deliveries in Zones A and C. For deliveries of refined glycerine in Zone B, add 2 cents per pound to prices shown in table.

Zone A includes all points east of and including North Dakota, South Dakota, Nebraska, Kansas, Texas; Laramie County, Wyoming; Colorado, east of but not including the following counties—Jackson, Grand, Gilpin, Jefferson, Douglas, Teller, Fremont, Custer, Huerfano, Costilla.

Zone B includes the territory between Zone A and Zone C as follows:

Washington, east of and including the following counties—Okanogan, Chelan, Kittitas, Yakima, Klickitat; Oregon, east of and including the following counties—Hood River, Wasco, Jefferson, Deschutes, Klamath; Nevada, Arizona, New Mexico; that part of Colorado west of and including those counties mentioned above; Utah; Wyoming, excepting Laramie County; Idaho, Montana.

Zone C includes the territory west of Zone B.

UPHOLSTERY FURNITURE FABRICS

Price Schedule No. 39

The maximum price of any present pattern of upholstery furniture fabrics shall be 105% of the price quoted for such pattern in the manufacturer's price list in effect on September 10, 1941, to the same general class of purchasers. If no such price exists, the maximum price shall be 105% of the highest price, f.o.b. seller's point of shipment, at which pattern was sold and delivered to a purchaser of the same general class in the sixty-day period ended Sept. 10, 1941.

BUILDERS' HARDWARE AND INSECT SCREEN CLOTH

Price Schedule No. 40

The maximum price of builders' hardware or screen cloth products shall be the highest price received by the seller for the delivery during the period between September 22, 1941, and October 21, 1941, for products of approximately the same grade, quality and amount to the same purchaser or to a purchaser recognized by the trade as entitled to similar treatment.

CARBON AND LOW ALLOY STEEL CASTINGS

Price Schedule No. 41

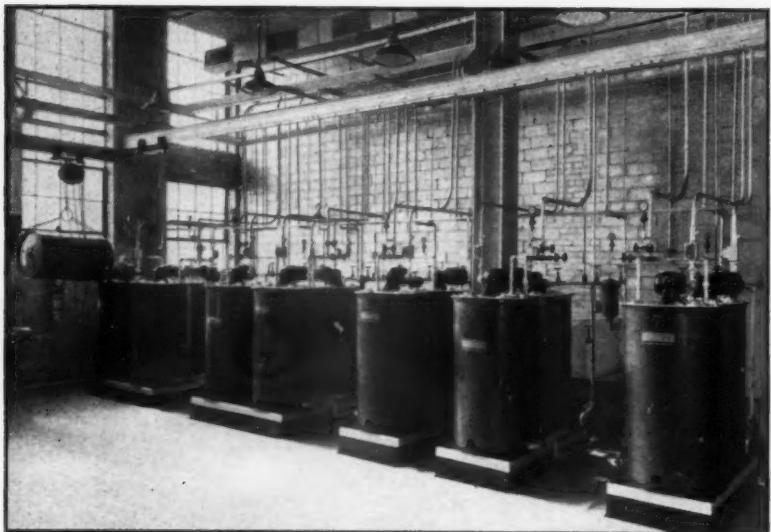
The maximum price for steel castings of every description, including railroad specialties, shall not be higher than the prices, together with extras, terms and conditions, which were or would have been charged by the producer on July 15, 1941. Price schedules must be filed with OPA by December 1, 1941.

PARAFFIN WAX

Price Schedule No. 42

Maximum prices on crude scale wax, white and yellow, range from 4½ cents per pound in loosely packed barrel shipments, to 5½ cents per pound, depending on melting point. Semi-refined wax comes within the same range. Maximum prices on refined wax range from 5 cents on wax with a melting point of 120-122 degrees, to 10½ cents for wax with a melting point of 149-151 degrees. Differentials are allowed on shipments of less than 10,000 pounds.

Basing points are New York City, Philadelphia, New Orleans, Texas Gulf ports, and Whiting, Ind.



Battery of 14 mixing and circulating units which supply paint to seven plant distributing systems.

Each mixing and circulating tank has its own pumping unit and filter. The mixing room is air-conditioned, using an exhaust system which withdraws air from both a low and a high level to maintain a year-round temperature of 78 Deg. F.

STREAMLINED SYSTEM



THROUGH nearly two miles of a new nine-pipe circulating system, paint in as many different colors is now carried swiftly to the half a hundred points of actual application to shelving, steel furniture, kitchen cabinets, lockers and other metal products as they come down the production lines at the plant of the Berger Manufacturing Division, Republic Steel Corporation, Canton.

Berger recently completed a sizable addition to its manufacturing facilities. A general relocation of departments, rearrangement of plant equipment and revamping of production lines was carried through at the same time and afforded the logical opportunity to go ahead likewise with a streamlining of the plant's paint handling methods.

Prior to the installation of the new centralized paint mixing and circulating equipment, enamels and lacquers had been delivered in 50 gallon drums by factory trucks to four widely separated mixing stations located near the various finishing areas in the plant. There, as required, the finishing materials were prepared for use by reducing with thinners, stirring by hand with wooden paddles for 10 to 15 minutes, etc.

Spray operators had to come to these decentralized sources of supply on an average of once every two hours to refill the containers from which they sprayed.

Paint material mixed by hand in different locations, at different temperatures, at different times, and by not one but several individuals, could not be consistent in viscosity, specific gravity or degree of agitation—all of which have a direct bearing on the color uniformity to be obtained. Certain advantages to be derived from the centralized mixing of paints were, therefore, fairly obvious. Most important, continuous mechanical agitation could be used, a more complete dispersement of pigments obtained, and a homogeneous solution maintained at all times. Also, a more uniform temperature could be maintained in a mixing room than under any other conditions. Viscosity and specific gravity tests could always be made under the same conditions and would, therefore, be more directly comparable. Moreover, there could be undivided responsibility assigned to a single individual placed in charge of mixing operations on each turn. Handling by truck of paint materials throughout the factory could be eliminated. Finally, the fire hazard which is always present when handling inflammable materials, such as enamels and lacquers, could be materially reduced.

Once it was decided to centralize the mixing operations it was only a step further to give serious consideration to the development of a system of distribution of the paints which would eliminate the necessity for the operators leaving their stations to refill their containers.

Centralized Mixing and Storage

As finally evolved, two centralized mixing and paint storage rooms were established from each of which circulating systems fan out to several points on two floors of the plant. In the larger of the two mixing rooms there are 20 mixing tanks, 14 of which serve a group of seven paint circulating systems. Five of the seven lines carry paint to an equal number of spray booths in the first floor spray room. Two of the five

lines continue on to a group of four spray booths on the second floor of the plant. A sixth paint line serves the second floor booths only. A seventh line runs to a group of dip enameling tanks located on the first floor.

The smaller mixing room has nine mixing tanks from which two circulating systems carry paints to the locker assembly lines.

Together these two rooms provide air-conditioned storage facilities for more than 20,000 gallons of enamels and lacquers, maintaining a year-round temperature of 78 degrees Fahrenheit.

The first floor spray room, with five lines serving each of five spray booths, is about 300 feet from the larger mixing room. Three of the four booths on the second floor, each served by three paint lines, accommodate two operators each, making a total of seven work stations involved. The longest distribution line, 1600 feet, runs from the main mixing room to the dip enameling area, where there are three outlets for three dip tanks.

Each tank is equipped with a mechanical agitation unit. A vertical shaft extending nearly down to the bottom of the tank has assembled on it two aluminum paddles of the propeller type. A quarter horsepower, explosion-proof, gear-head motor mounted on top of each tank is used to revolve the paddles at 59 rpm. Anti-whirl baffles are welded to the inside of the tanks to prevent swirling of the material. The paddle blades are designed with an angle of pitch which tends to throw or lift the paint material upward as they are rotated. In this fashion the heavier pigments that otherwise would tend to settle out of solution with the lighter solvents are kept thoroughly mixed.

The larger group of mixing tanks is operated in conjunction with the seven pipe circulating systems for handling production colors. The smaller group is used for mixing batch quantities of paint required for short runs of special colors.

Each of the seven circulating systems in the larger mixing room is equipped with an internal gear type of

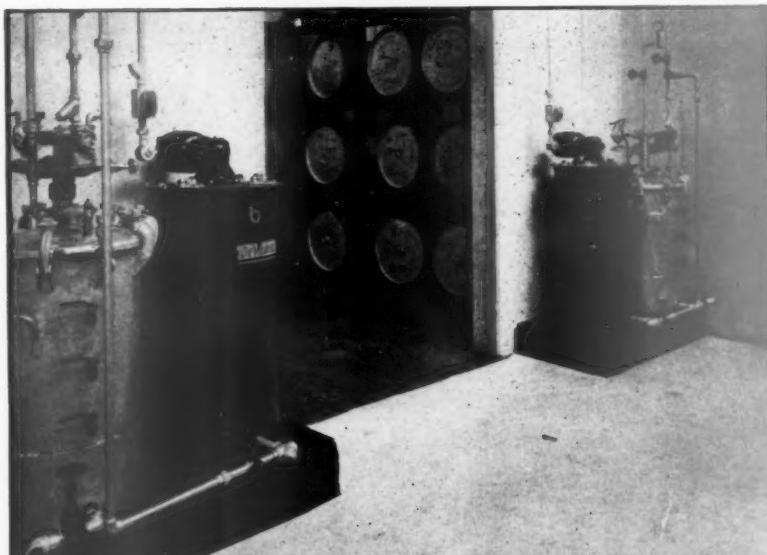
FOR PAINT DISTRIBUTION

One-inch pipe was used on all distribution lines having a total length of 1000 feet or more. Three-quarter-inch pipe was used for all runs of less than 1000 feet in length. In every case the same size pipe was used for the entire length of a line. For all changes of direction, 12-inch minimum radius bends were used instead of pipe fittings.

The various pipe lines are currently being used to circulate the following colors for the following products:

Color	Product
1. Green dipping enamel	Shelving
2. White Synthetic Enamel	Roaster Cabinets
3. Gray Synthetic Enamel	Liquid Gas Cabinet
4. Green Synthetic Enamel	Furniture
5. Black Synthetic Enamel	Furnace Jackets and Sink Cabinet Bases
6. White Synthetic Enamel	Kitchen Cabinets
7. Ivory Synthetic Enamel	Automotive Display Cabinets
8. Olive Green Lacquer	Locker Door and Frame Assemblies
9. Brown Lacquer	Locker Door and Frame Assemblies

Back in the mixing rooms, the circulating units which mix the paint materials and feed them into the distribution lines are made up of a pair of mixing tanks (one used for mixing, one serving as a reservoir), a pump unit, a filter, and the necessary valves, gauges, and piping to and from points of use.

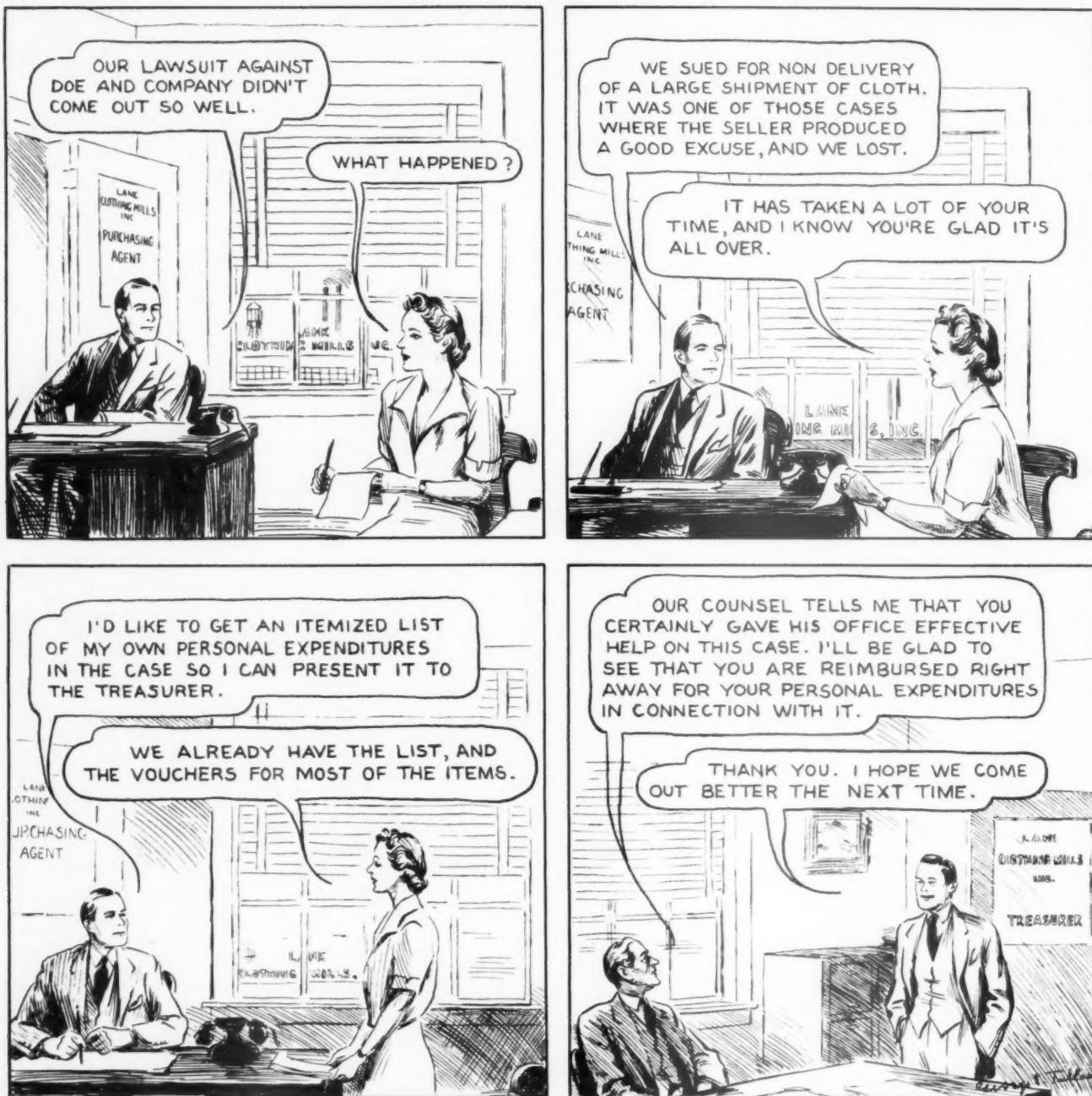


Two compressed air circulating systems in the smaller mixing room are used to circulate paint from this point.

Five paint lines serve the first floor spray room which has five spray booths. Adjustable fluid regulators directly above the operators' heads regulate the spraying pressure to be obtained from each line.

PEN-POINTS ON PURCHASE LAW

BY H. H. SHIVELY, BABSON INSTITUTE



THE PURCHASING AGENT'S EXPENSE ACCOUNT

FROM previous episodes it has been pointed out that the Purchasing Agent is a representative commissioned to make contracts for the firm with which he is connected. In fact, he is charged with the duty of making them, within the authority given him and according to any instructions he may have received from his employer.

On the part of the firm, there is the obligation to pay the Purchasing Agent an agreed compensation or the reasonable value of the services rendered.

If, in the pursuit of his activities for his company, the agent expends his own funds, it is the duty of the company to reimburse him, unless the expenditures are unreasonably or improvidently made.

In carrying out the assigned duties of his position, the Purchasing Agent may occasionally cause injury to others. Against the liability for these also, he is entitled to indemnity by his firm, whether or not such has been expressly so agreed.



**...and the Mill Supply Representative
delivered them in his own car at 2:50!**

It was nearly noon on a comparatively calm Saturday when the Plant Maintenance Chief's preparations to leave were rudely interrupted by an excited helper, shouting:

"Hey, boss, that order of fittings! None here and the machines are down!"

Then the Chief remembered the Purchasing Department's report that tube fittings of the needed size and type couldn't be found—remembered, too, that clever young salesman from the Mill Supply Distributor's who seemed always to know where to find "tide-over" supplies of emergency parts or materials.

Fifteen minutes later he was earnestly addressing that salesman across his desk:—"Mister,

I've got to have 500 tube fittings at 3 o'clock today—the machines in Mill 3 won't be rolling Monday." And he did get them—the salesman knew where they could be borrowed temporarily, and he delivered them in his own car at 2:50!

The men at *your* Mill Supply Distributor's are as human as the rest of us—but they are a loyal, persevering lot and frequently they do know where to go for emergency supplies of the things you need most urgently.

And it is because we know that they are on the job everywhere, all the time, that we long ago organized the distribution of "Cleveland" Tools among the country's leading Mill Supply Distributors exclusively.

This incident is typical of the unusual services that many Mill Supply Distributors are rendering their customers during the Emergency.

We favor adequate Preparedness for National Defense

The **CLEVELAND**
TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES

30 READE ST. NEW YORK 6515 SECOND BLVD., DETROIT

9 NORTH JEFFERSON ST. CHICAGO

**TWIST DRILL
COMPANY**
1242 EAST 49th STREET
CLEVELAND

650 HOWARD ST. SAN FRANCISCO

LONDON - E. P. BARRUS, LTD. - 35-36-37 UPPER THAMES ST., E.C.4

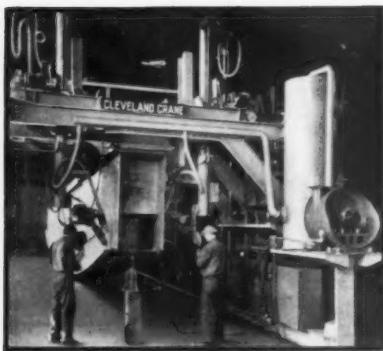


"CLEVELAND" DISTRIBUTORS EVERYWHERE ARE READY TO SERVE YOU

When writing Cleveland Twist Drill Company please mention Purchasing

New PRODUCTS & IDEAS

AUTOMATIC WELDING GANTRY



The Cleveland Crane & Engineering Company, Wickliffe, Ohio, has designed, built and recently installed in their structural department, an automatic welding gantry for making long welds of 1'-0" to 120'-0" continuously and automatically.

The gantry has many novel features which make possible better welds, easier operation and improved working conditions for the operators.

The machine can be traveled at any speed from .30 to 148 feet per hour to suit various size welds and materials. As the gantry travels, the welding rod is fed precisely and automatically to both sides of the work. In the welding heads a tape is wrapped around the rod to shield the arcs. By welding both sides of the work at the same time, the welding heat is distributed evenly, thereby neutralizing stresses and minimizing distortions that otherwise would take place, and thus produce straight accurate girders.

The welding heads are raised or lowered by individual push-button-controlled motorized drives that are mounted on separate hand-propelled trolleys which may be adjusted to suit the width of the work.

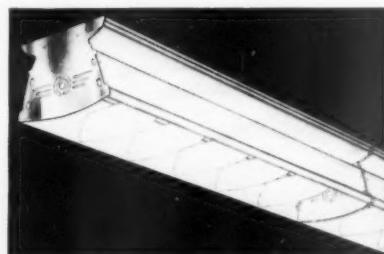
Located on a platform in the leg of the gantry are a motor-generator set for

actuating the welding arcs; two welding transformers and control, with switches and meters. On this leg also is mounted an air-filtering unit which, by means of suction nozzles placed at the welding heads, removes the welding smoke and makes for more healthful working conditions.

Provision has been made for easily connecting-in hand welding equipment to make use of the welding transformers during periods when there is no work requiring automatic welding, or for places where hand welding is desirable.

The gantry is of the rigid all-welded steel construction and is provided with roller bearings throughout. It travels on two rails, one located on the wall and the other set in the floor. The travel motor drives wheels on both rails and thus assures even straight-line travel and eliminates possibility of crane skewing action.

EXPOSED TROFFER FLUORESCENT FIXTURE



These louver-type exposed Troffers for direct ceiling mounting are designed for single unit installations and long continuous runs. They are available for one and two 48" 40-watt lamps parallel and for one 60" 100-watt lamp. Louvers are removable. Fixture-body and louvers finished in baked "Super White" enamel. Units are designed for easy installation and servicing. Made by Day-Brite Lighting, Inc., St. Louis, Mo.

ALL PURPOSE MITERING ATTACHMENT



Ripping—cutting off—mitering operations are facilitated with the DOALL mitering attachment manufactured by Continental Machines, Inc., Minneapolis, Minn. These three operations are performed on a single unit adapted to either manual or power feeds. Quickly mounted on the work table, no time is lost in applying pressure direct in line with saw cut. Rods, tubing, bars, gates, channels, rails and irregular shapes can be notched, squared, ripped and mitered without excessive setting up delays.

Attached to the front instead of the side of the work table, on a sectional guide for full table coverage, the mitering attachment does not interfere with the removal of filler plate.

The mitering head is attached to slide rods and carried by the slide rod bracket mounted on the above guide. A removable guard gives protection against sawing into the mitering head.

Manual operation is accomplished by a six-inch hand wheel through a screw which engages an internally threaded tube on the slide rod bracket for feeding mitering head directly toward the saw.

Power feeding merely requires the disengaging of the internally threaded tube.

The mitering attachment gives full sawing capacity for complete table coverage with adjustable stops for limiting the stroke to any desired amount.

**Strain and speed
are hardest to handle
at the turns
in PIPING, too!**

On a bobsled run, constant danger lies at the banked turns. Here the utmost skill of the driver and braker are required to avert an accident. (I.N.S. photo).



Insure safer, stronger, trouble-free piping systems with TUBE-TURN welding fittings

When the fluids or gases in your piping systems zoom through the lines and swerve into the turns—*added strain and friction* strike the fittings and joints. Trouble usually develops here *first* in any piping system because the most danger lies at the turns!

Weld with TUBE-TURN fittings and your plant piping systems will last far longer, function more efficiently and safely, save valuable space, and cut upkeep costs.

There is a TUBE-TURN for every change in flow direction—elbows, returns, tees, reducers, laterals, nipples and flanges—made with Tube-Turn's exclusive forging process to give unequalled reinforcement at these danger spots.

Get complete facts in the helpful Tube-Turn engineering data book and catalog. Write today!

TUBE-TURNS, Inc., Louisville, Ky. Branch offices: New York, Philadelphia, Chicago, Pittsburgh, Cleveland, Tulsa, Los Angeles. Distributors everywhere.

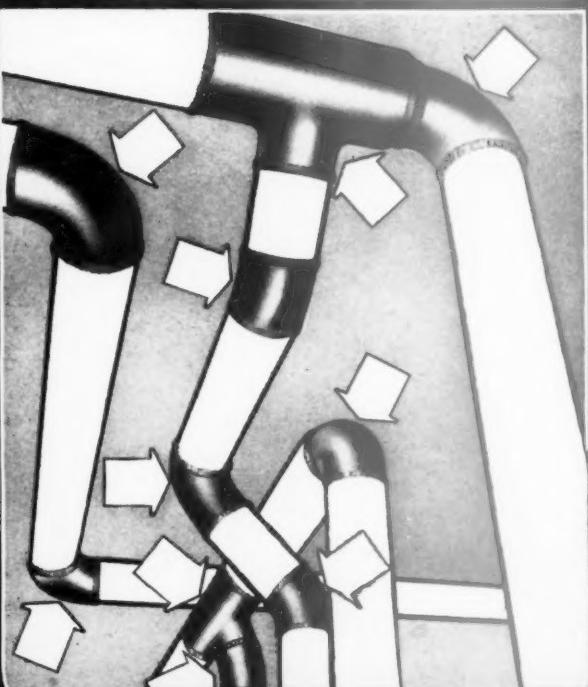
TUBE - TURN
TRADE MARK
The FIRST
WELDING FITTINGS
1ST
AND STILL THE BEST

Welding Fittings



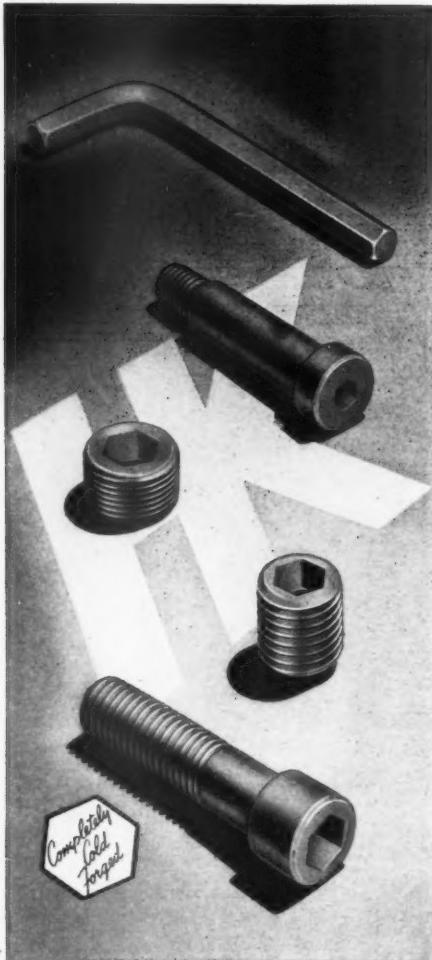
WELDING WITH TUBE-TURNS REMOVES "DANGER AT THE TURNS" IN PIPING

When you think of "turns" in piping systems, remember they occur within tees, reducers, laterals, nipples, heads, etc., as well as within elbows and returns. Wherever there are abrupt changes in flow direction you'll find extra wear and tear. TUBE-TURN welding fittings provide maximum extra strength and safety, and practically eliminate maintenance troubles, at these danger spots.



SERVING THE NATIONAL DEFENSE PROGRAM

Precision
Made . . .



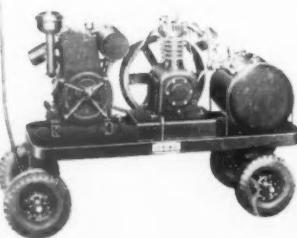
GUARANTEED
Unfailing
PERFORMANCE

Sold thru Authorized Stock Carrying H-K DISTRIBUTORS



When writing the Holo-Krome Screw Corporation please mention Purchasing

PORTRABLE SPRAY PAINTING AIR COMPRESSING OUTFITS



■ Two greatly improved series of four and six horsepower portable spray painting air compressing outfits, for operation of two and three spray guns, have been released by the DeVilbiss Co., Toledo, Ohio.

The outfits are ideal for larger installations: in industrial and maintenance work, highway departments, public works, oil fields, mines, public buildings and the like.

Twenty assemblies are included in the two series—skid-mounted outfits, rubber-tired and steel wheeled trucks, and two-wheeled trailers.

The six horsepower units may be had with or without an electric starter, and air or water-cooled engines are optional with this series.

All six horsepower units have twin disc clutch as standard equipment. This permits starting of the engine independently of the compressor.



MULTIPLE SPINDLE DRILLING MACHINES

■ To step up production on small-hole drilling and tapping operations, a series of two, three, and four-spindle drilling machines have been introduced by Atlas Press Company, Kalamazoo, Michigan. The drilling heads of these machines incorporate the ball bearing equipped floating drive.

Table weight of the three and four-spindle machines is reported at 575 pounds, furnishing a solid support for the smooth movement of heavy jigs, fixtures and parts in production quantities. Each drilling head is equipped with its own motor mounting and a new type of positioning control with crank handle.

Condensed specifications: Number of spindles 2, 3, and 4; center distances between spindles 15", 18", and 13" respectively; table to Jacobs chucks 26", to No. 1 Morse tapers 24 $\frac{1}{4}$ "; column to center of spindle 7 $\frac{1}{2}$ "; table surface (3 and 4 spindle machines) 21" x 54"; spindle travel 4"; drilling heads SKF ball bearing equipped; motors recommended $\frac{1}{3}$ or $\frac{1}{2}$ hp. 1740 rpm.; net weight less motors 1100 lb. (4 spindle machine).

**MORE PRECIOUS
THAN SILVER OR GOLD**

Less than a thousand years ago, steel was a precious metal. Kings and emperors gave for fine Damascus blades, more than their weight in gold.

In the world conflict today, steel is the precious metal that protects America. While a large part of the earth's gold lies buried in the Kentucky hills, steel in thousands of shops is being fashioned into weapons and equipment of war for the preservation of our way of life.

Defense is first with every thinking American. So every customer will approve of the fact that a steadily increasing part of Youngstown's output of finished and semi-finished steel is going for defense purposes. At the same time, we are delivering every ton we can for domestic use - for that, too, is vital to the preservation of the American way of life.

Youngstown products include Pipe and Tubular Products - Sheets - Plates - Conduit - Bars - Tin Plate - Rods - Wire - Nails - Tie Plates and Spikes

25-26D

**THE
YOUNGSTOWN
SHEET AND TUBE COMPANY**

Manufacturers of Carbon, Alloy and Tool Steels
General Offices - YOUNGSTOWN, OHIO

When writing The Youngstown Sheet and Tube Company please mention Purchasing

A SOAP TO SAVE



WORKING EFFICIENCY

*Economical because of its high number
of washes per pound...and so efficient*

Workmen with hands toughened, stiffened and made dermatitis-susceptible by harsh washing cost you money. You pay for it now . . . but CAN repair the situation.

LANOKLEEN

supplies the means—a new industrial hand cleaner that is JUST AS POWERFUL in cleansing qualities as any detergent-soap you are using. BUT GENTLE IN ACTION. No abrasive grit. No harsh caustics, LAN-O-KLEEN uses non-abrasive corn-meal to rub out the dirt and a SPECIAL IMPREGNATION with lanolin. This important animal oil (1) buffers the mild soap alkali and (2) helps restore the natural oiliness to the skin. There's nothing else like it!

Yet LAN-O-KLEEN costs no more per washing than other soaps.

Clip the Coupon and let your men's enthusiasm prove what we say.



WEST DISINFECTING COMPANY

42-16 WEST STREET, LONG ISLAND CITY, N.Y.



Attention Dept. PR

I am interested in your FREE TRIAL offer of a Dispenser and sufficient LAN-O-KLEEN to test out for 2 to 3 weeks in one department. Please get in touch.

Name of Individual.....

Name of Company.....

Street & City.....

CONTROLLED ATMOSPHERE FURNACE

■ **The Sentry Company** of Foxboro, Mass., has announced an addition to their popular Model "Y" electric high-speed steel hardening furnaces. The new unit fills a demand for a controlled atmosphere unit for high speed steels that will accommodate tools up to a maximum of $4\frac{3}{4}'' \times 4\frac{7}{8}'' \times 11''$. This furnace provides controlled atmosphere suitable for any type of high speed steel, molybdenum, cobalt or tungsten, through the use of their diamond block method.

It is being offered in two styles. One is pedestal mounted (as illustrated) and has an asbestos loading shelf and wire mesh terminal guards. The other is fitted with legs for bench mounting and does not have any loading shelf or guards.

All other specifications of either style are identical. Steel shells are of extra rugged construction and are suitably insulated for 2500° F. operation. The muffle is removable and has inside dimensions of $6'' \times 6'' \times 13''$ deep. Heating elements are Globar and are so located above and below the muffle as to assure uniform muffle temperature. The maximum rating of the furnace is $22\frac{1}{2}$ kw. and in normal operation consumption will range from 5 to 15 kw. per hour. Heating time from cold to 2350° F. is about 75 minutes. An improved and patented design of air-cooled terminals eliminates the usual water-cooling system and all terminals and electrical contacts are shielded. Either type is designed for direct connection to 110 volt or 220 volt supply without the use of a transformer. Overall dimensions of the pedestal style are: width $31\frac{1}{4}''$, depth $29\frac{3}{4}''$, height $62\frac{1}{4}''$ with the hearth $44\frac{1}{4}''$ above the floor.

HIGH STRENGTH MEEHANITE METAL

■ **Important time** and cost savings are now being effected in many machine shops today as a result of a recent development in the application of high strength Meehanite metal for sintered carbide tool shanks. A more or less frequent problem, now particularly costly from the time standpoint, has been the breaking of tool shanks on multiple tool heavy duty lathes. It is generally assumed that tool shank fractures are mainly caused by vibration, and experience has proved that due to the vibration damping qualities

When writing West Disinfecting Company please mention Purchasing

WHEN RUSH ORDERS ARE KNOCKING AT YOUR DOOR



SUB-CONTRACT

YOUR SHEET, STEEL and PLATE WORK TO

KIRK & BLUM



Save time and worry—meet urgent deliveries by sub-contracting your sheet metal parts to **KIRK & BLUM**.

With its wealth of experience, extensive facilities and skilled manpower, this organization is equipped to design, manufacture and assemble sheet steel jobs with maximum speed and at minimum cost, from single units to quantities on a production basis.

Numerous manufacturers with defense and other "can't wait" orders, find that **KIRK & BLUM** service advantageously releases their men, machines and floor space for other important work — proves an economy, both in time and money.

What **KIRK & BLUM** are doing for others, they can do for you. Send your drawings for prompt quotations.

We fabricate Stainless (all types) Aluminum, Monel, Brass, Copper, Angle and Bar Shapes.

KIRK & BLUM SERVICE INCLUDES:

Shearing, Punching, Bending, Stamping, Pressing, Welding, Forming, Rolling, Wiring, Edging, Hammering, Flanging, Beading, Riveting, Assembling.



THE KIRK & BLUM MANUFACTURING COMPANY
2830 SPRING GROVE AVENUE . . . CINCINNATI, OHIO
Over a Third Century of Service to Industry

HAZARD LAY-SET WIRE ROPE



Steel Thread of the Industrial Fabric

In the Nation's great loom of industry, Hazard's Lay-Set Preformed Wire Rope has become a needful part of the whole massive pattern. Cities, bridges and tunnels; railroads, highways and waterways; mines and quarries: scores of great projects in many fields have been aided by Lay-Set Preformed Wire Rope. Lay-Set Preformed construction lasts much longer. It thereby saves enough steel to make a mighty contribution to National Defense.

Lay-Set Preformed saves time by reducing replacements. It is easier to handle. It steadies production. It saves money. Lay-Set Preformed Wire Rope is made by the **Hazard Wire Rope Division** of the American Chain & Cable Company, Inc., and is one of the 137 essential products we build for Industry, Agriculture and Transportation.



CHAIN—Welded Tire Chains
Welded & Weldless Chain & Attachments
AMERICAN CHAIN DIVISION

CABLE—Tru-Lay Preformed Wire Rope
Crescent Non-preformed Wire Rope
Tru-Loc Fittings—Tru-Lay Control Cables
AMERICAN CABLE DIVISION

BRAKES—Tru-Stop Brakes for Trucks & Buses
AMERICAN CABLE DIVISION

CUTTING MACHINES—Wet Abrasive
Cutting Machines—Nibbling Machines
ANDREW C. CAMPBELL DIVISION

In Canada—Dominion Chain Company, Limited • In England—The Parsons Chain Company, Ltd., and British Wire Products, Ltd.

IN BUSINESS FOR YOUR SAFETY

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

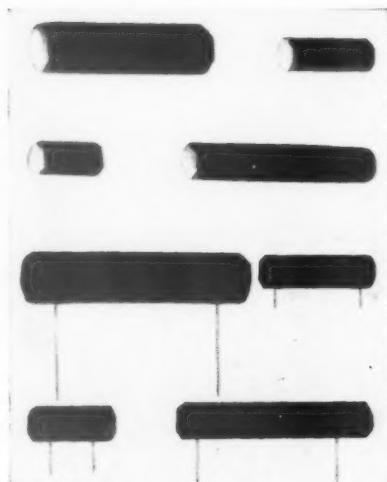
When writing American Chain & Cable Company, Inc. please mention Purchasing

of Meehanite the vibratory stresses are absorbed, tool chatter reduced, and breakage drastically reduced. Furthermore, because the coefficient of expansion of sintered carbide more nearly approaches that of Meehanite than it does that of steel, heat conductivity is improved with corresponding reduction of expansion stresses in service.

A typical Carboloy tipped Meehanite iron tool shank was put in service and performance was as follows: 35 hours @ 217 surface feet per minute on high grade Meehanite castings and 8 hours @ 389 surface feet per minute on chilled castings. It was then ground and gave 16 hours @ 245 surface feet per minute and 24 hours @ 210 surface feet per minute on high grade Meehanite castings. Subsequently this tool ran 359 hours.

These shanks may be ground more efficiently because silicon carbide wheels load up more rapidly with steel than with Meehanite.

NEGATIVE TEMPERATURE COEFFICIENT RESISTORS



Four standard sizes of Keystone negative temperature co-efficient resistors—with metal coated ends above, and with moulded-in wires below. The resistors are shown actual size.

The **Keystone Carbon** Company, Saint Marys, Pa., announces that its line of negative temperature coefficient resistors are now available with metal coated ends for making electrical connection.

Hitherto, their negative temperature coefficient resistors were supplied only with moulded-in wires. The addition of resistors with metal coated ends to the regular line has increased their range of application and has simplified design problems by permitting the use of cartridge or clip method of mounting.

The chief characteristic is their decrease in electrical resistance with an increase in temperature. This property makes the material useful where it is desired to reduce or eliminate initial current surges, to secure a time delay or "gradual building-up" of the current

CHAIN BLOCKS—Trolleys, Presses
FORD CHAIN BLOCK DIVISION

***WIRE ROPE**—Lay-Set Preformed Wire Rope

Nanopore Non-preformed Wire Rope
"Koroldess" (Stainless Steel) Yacht Rigging

Aircraft Control Cables

HAZARD WIRE ROPE DIVISION

AUTOMOTIVE EQUIPMENT—for

garages and service stations

MANLEY MANUFACTURING DIVISION

FENCE—Page Fence, Wire and Rod Products,

Welding Wire, Shaped Wire

PAGE STEEL AND WIRE DIVISION

VALVES—Bronze, Iron and Steel—Steel

Fittings + Este Engineering Specialties

READING-PRATT & CADY DIVISION

CASTINGS—Malleable Iron Castings

AMERICAN CHAIN DIVISION

Electric Steel Castings

READING STEEL CASTING DIVISION

HOISTS and CRANES—Wright Chain

Hoists, Electric Hoists, Cranes, Presses

WRIGHT MANUFACTURING DIVISION



CO₂ and **C-O-TWO** are spelled differently, but they sound the same when pronounced, yet *there is a difference.*

CO₂ is the *chemical symbol* of carbon dioxide gas which is liquified under pressure or converted into solid or dry ice.

Carbon dioxide is used for carbonating beverages, refrigeration, floatation of aircraft, life rafts or life vests and for many other purposes.

One of the outstanding applications of **CO₂** (carbon dioxide) is for fire extinguishing and fire prevention. **C-O-TWO** is the registered trade-mark and trade name of the **C-O-TWO FIRE EQUIPMENT COMPANY**,

manufacturers of carbon dioxide type fire extinguishing equipment and smoke detecting systems.

The word **C-O-TWO** is a registered trade-mark which appears on all of this company's products and this same word is a part of the manufacturer's corporate name.

To be safe, be sure you know the difference. Specify "**C-O-TWO**" and this company's name when ordering carbon dioxide type fire extinguishing equipment or smoke detecting systems.

Approved in accordance with all requirements of the Underwriters' Laboratories, Inc., Factory Mutual Inc., the U. S. Army, Navy and Bureau of Marine Inspection and Navigation.

C-O-TWO portable

C-O-TWO hose reel

C-O-TWO crash truck

C-O-TWO wheeled portable

C-O-TWO system

C-O-TWO FIRE EQUIPMENT CO.

10 EMPIRE STREET, NEWARK, NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

When writing C-O-Two Fire Equipment Co. please mention Purchasing

MAKE YOUR FILES LAST LONGER

1. Keep your files clean. Clean files cut faster and last longer. They may be easily cleaned with a file card or stiff fibre brush.
2. Use just pressure enough to keep the file cutting. If allowed to slip or rub it will glaze the work and dull the teeth quickly.
3. Don't put pressure on the back stroke when filing.
4. Rubbing chalk in file teeth helps when making fine, smooth cuts.
5. Keep your files dry and free from dust.
6. Hard spots and hard corners on iron castings are hard on files. On such work first go over it a few times with an old file before putting your good file on the work. It is File economy.
7. Why not have a rack for your files instead of throwing them in a pile—it's File economy. These hints on care and use are from the pamphlet "File Facts." A postal card will bring a Free copy to you.

SIMONDS

GUARANTEED FIRST QUALITY

RED TANG FILES

Simonds
U.S.A.

**SIMONDS SAW AND STEEL CO.
FITCHBURG, MASSACHUSETTS**

METAL-CUTTING TOOL MANUFACTURER
Circular and Band Saws • Shear Blades • "Red End"
Hack Saws • "Red Tang" Files • Tool Bits

through a piece of equipment, to provide temperature compensation in apparatus or equipment which exhibit rising resistance with increase in temperature, and for other applications where a negative temperature coefficient is required.

They are available in four standard sizes, as shown in the illustration. These sizes are as follows: $5/32" \times 3/8"$, $5/32" \times 1/2"$, $5/32" \times 1"$, and $1/4" \times 1"$. These have maximum wattage ratings ranging from 0.75 to 3.0 watts.

TURRET LATHE



■ **Designed with** hand feed to cross slide and manually operated, this low-cost motor-driven lathe is furnished with six-position turret having six $1\frac{1}{2}$ in. diameter tapped holes in each turret face for mounting various sizes of tool holders.

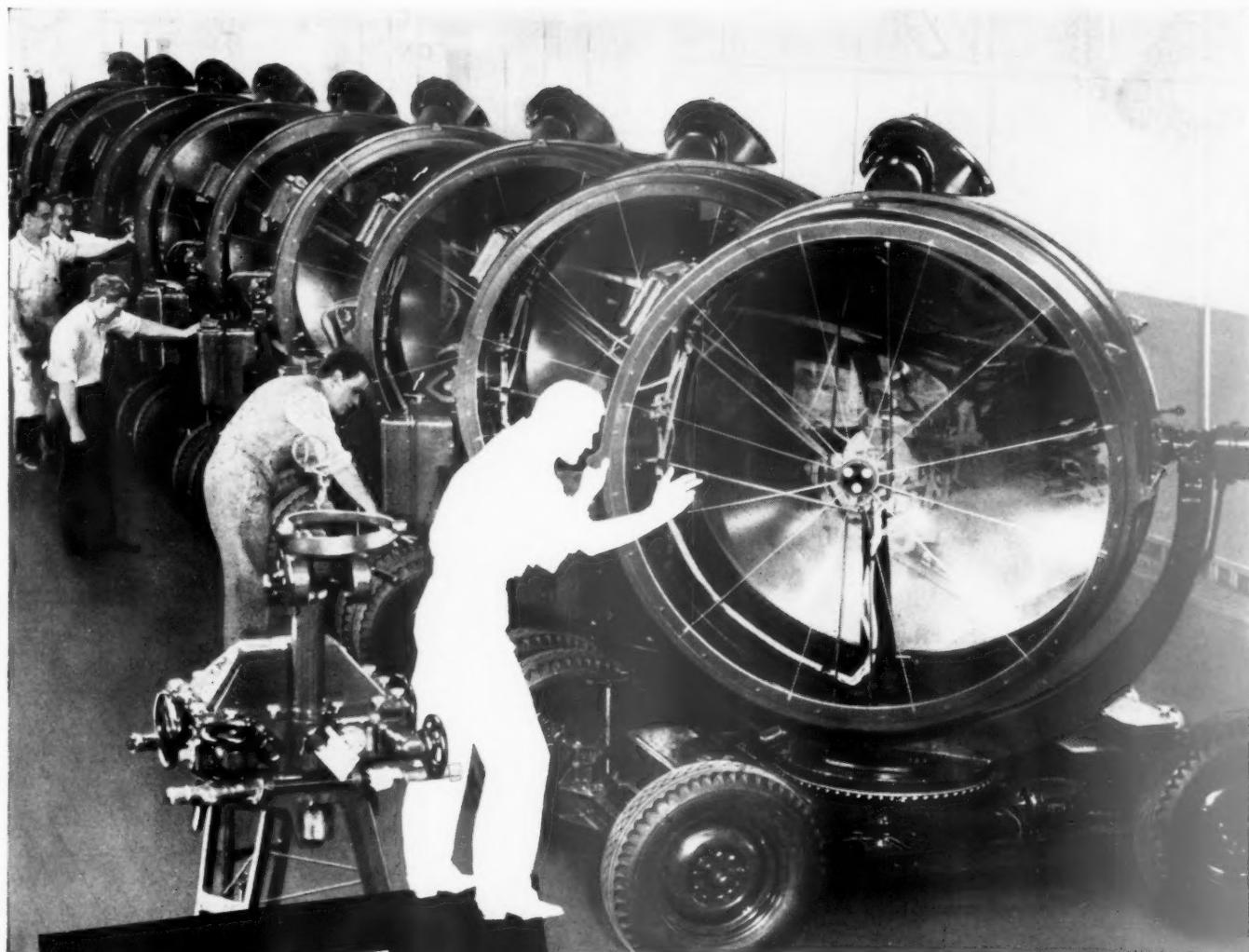
Among the many operations performed by the machine are boring, reaming, threading, facing, and cutting off. Less skilled operators are required as many complicated features of design and operation have been eliminated.

Automatic chuck capacity is $1\frac{1}{2}$ in. round bar; $1\frac{1}{16}$ in. square bar; and $1\frac{5}{16}$ in. hex bar. Swing over bed is 14 in. and $6\frac{1}{2}$ in. swing over cross slide. Carriage travel is 11 in. when there is a cross slide on the 33-in. main ways. Maximum movement of screw feed cross slide is $6\frac{1}{2}$ in. and of lever feed cross slide $4\frac{1}{2}$ in.

The machine is furnished with either worm drive or direct drive depending upon the required range of spindle speed. In the worm drive, the hardened and ground steel worm, like the spindle, is mounted in ball bearings, transmitting a smooth, even flow of power through a bronze worm wheel to the spindle. Due to this smooth flow of power, the machine can make unusually heavy forming cuts with absence of chatter.

In the direct drive, for high speed work on small diameters and non-ferrous metals, the machine is equipped with a two-speed, 2-hp. motor, manually controlled, driving the spindle through triple V belts. Quick change sheaves and the two-speed motor provide a range of spindle speeds up to 3000 r.p.m.

Product of Oster Mfg. Co., Cleveland, Ohio.



THE MISSING MAN...

His illness costs your business and the nation:

- ... a week's production a year
- ... the full-time work of a million men
- ... time enough to build 164,706 combat tanks

ILLNESS keeps your men off the job an average of *one week each year*. This estimate is based on a U. S. Public Health Service report. Over half of this lost time is due to the common cold and its complications, several other studies indicate.

A recent N.A.M. survey shows that absences were cut 29.7% in firms which established health programs. In a good health program, soap, hot water and individual tissue towels retard the spread of illness.

"Soft-Tuff" ScotTissue Towels are now enjoyed by over 50% more workers, based on 1941 sales increases. When wet, "Soft-Tuff" towels have 10 times more rub strength than previous ScotTissue Towels, yet are soft as ever.

• • •
For help in improving washroom hygiene, comfort and economy, call on the Scott Washroom Advisory Service.

Copr. 1941, Scott Paper Co., Chester, Pa. Trade Marks "ScotTissue," "Soft-Tuff," Reg. U. S. Pat. Off. Trade Mark "Washroom Advisory Service" registration app. for.

**STAY TOUGH
WHEN WET**

**INDIVIDUAL...
SANITARY**

Soft-Tuff
ScotTissue TOWELS

When writing Scott Paper Co. please mention Purchasing

HUSSEY'S *Complete Resources*

ARE WORKING 24 HOURS DAILY
FOR INDUSTRIAL REARMAMENT



ROLLING MILLS

In Hussey Rolling Mills—strict control and a single high quality standard prevails. Every Hussey Copper product is of known top quality from ore to finished product.



DEFENSE SERVICE STAFF—

Hussey Service Engineers located in all warehouses will be glad to lend assistance on your copper problems, without obligation.



C. G. HUSSEY & COMPANY
(Division of Copper Range Co.)
Rolling Mills and General Offices
PITTSBURGH, PA.

When writing C. G. Hussey & Company please mention Purchasing

RESISTANCE WELDING CONTROL

■ A complete line of resistance welding heat controls, designed to take care of virtually every conceivable application of such units to resistance welding operations is being offered by Weltronic Corporation, Detroit, Mich.

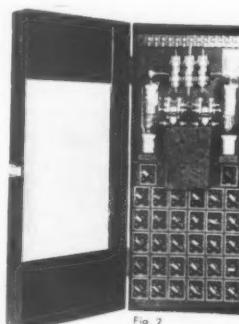


Fig. 2

The various models available are designed to take care of such applications as the following: single-weld operations, using either guns or pedestal type welders; pulsation welding — requiring differing amounts of current for different "shots"; multi-spot welding as with hydromatics, ultra-speed welders, etc., where individual adjustments are desired for each weld or group of welds of the series.

Three basic models are available, the 50-Y unit designed for accurate current control for single welds, the 50-W, a multiple heat control designed for either pulsation or multi-spot welding, and the 50-XX which is an automatic heat rise control for either single-spot or pulsation welding.

All heat controls are of the electronic type, providing an infinitely variable adjustment of current value. Their function is to "chop out" portions of the current wave to control the amount of current actually used for welding. When such heat controls are provided, autotransformers may be omitted in the welding circuit. The use of electronic heat control implies the requirement, that electronic type of contactors be used in the welding equipment circuit.

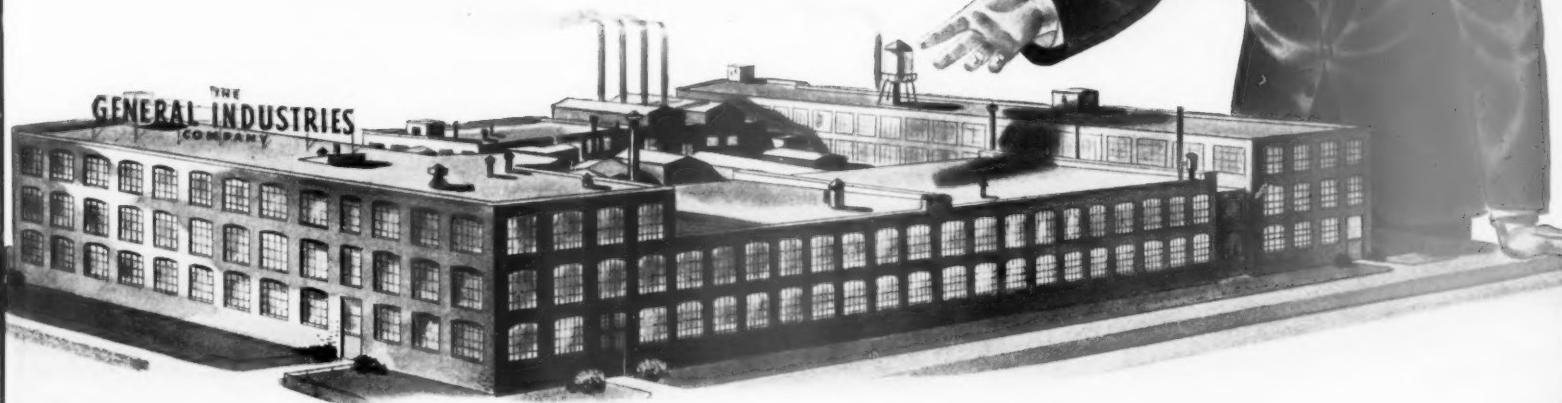
WELDING BENCHES

■ Two welding benches have been developed by Lyon Metal Products, Aurora, Ill., for use in vocational and machine shops, garages, etc. One bench is specifically designed for gas welding with frame built to support a fire brick top 34" from the floor. Bench has shelf with four separators for welding rods and additional space for storage.

Another bench is for arc welding and has a 35" high shield on back and sides of a smooth heavy 10-gauge steel working top 33" from the floor. This table also has shelf and rod separators.

LET US HELP WITH YOUR DEFENSE WORK-

**We can produce the
Molded Plastics parts**



...In any quantity...any specification...on time

- Molded plastics parts for that defense job of yours must be made right and they have got to come through fast.

No time for experimenting now. Your supplier must know his business, have the equipment, be set to go, and deliver on time.

Here is where General Industries fits into your picture perfectly, — Big plant, with modern machines that can handle any type of molded plastics, any size,—even the very largest.

Engineers and workmen who for long years have been trained in accuracy and quality production—Yes, General Industries can qualify for your job in every particular, no matter what the quantity or how rigid the specifications.

"On Time" too. The reputation of General Industries for getting jobs going and keeping them

going, steadily producing molded plastics parts to take their place in the assembly line without delays . . . this reputation means something to you in these times when, as never before, the work must come through on time.

LET US TALK SPECIFICALLY WITH YOU

Tell us what molded plastics parts you require for your defense job and we will tell you about our equipment for making them, estimate costs and name delivery dates. We will promptly give your problem executive attention.

**WRITE, TELEGRAPH, OR
TELEPHONE ELYRIA-2238**

*or come to Elyria, inspect our
plant, and discuss your problem
first hand with our engineers*

The GENERAL INDUSTRIES Co.
MOLDED PLASTICS DIVISION • ELYRIA, OHIO

SAND SPREADERS

FEED GRINDERS

POWER SAWS

THESE ARE BUT A FEW OF THE WIDE RANGE OF APPLICATIONS OF BRIGGS & STRATTON MOTORS

Service Men -
Report That Briggs & Stratton Motors Deliver Unprecedented Performance Under All Conditions

Service men who really know what happens to power equipment "on the job" report that Briggs & Stratton motors are "tops" in motor performance. They have proven themselves unusually economical under all operating conditions—perform year after year with little or no maintenance expense—are enthusiastically endorsed by owners and users alike. This is another reason why Briggs & Stratton air-cooled motors are the choice of hundreds of manufacturers of machines, tools and appliances using gasoline power from $\frac{2}{3}$ to 6 H.P.

BRIGGS & STRATTON CORP., Milwaukee, Wis., U.S.A.

When writing Briggs & Stratton Corp. please mention Purchasing

RESPIRATOR



■ Maximum protection against the inhalation of pneumoconiosis - producing and nuisance dusts is afforded by the respirator developed by the DeVilbiss Company, Toledo, Ohio.

Approved by the United States Bureau of Mines, it is said to embody nine unique features. These combined, make it more compact, lighter, easier to breathe through, more comfortable to wear, and easier to clean and maintain than previous models.

A scientifically and compactly designed cartridge, measuring only $2\frac{1}{8}$ by $1\frac{1}{2}$ inches and weighing but one ounce, actually provides more than 41 square inches of breathing and filtering area. Ingenious multi-vane construction allows every inch of this filter to be used efficiently. This means no air restriction to cause difficulty in breathing, plus greatly increased filtering efficiency.

The filter is easily cleaned by blowing accumulated dust from vanes with an air dusting gun or nozzle, thus maintaining peak performance and requiring less frequent replacement.

It is designed to fit closely and without leakage, the contour of practically any face. This is an important feature, for full protection depends upon a good fit.

DEFENSE MATERIAL DEVELOPED TO REPLACE ALUMINUM

■ Development of a new non-metallic material one-third lighter than aluminum and designed to replace that metal in many important defense uses was announced today by the United States Rubber Company.

The substance, which is made from fibrous and rubber-like ingredients, has already been tested and approved by the United States Army.

Of prime importance in the present emergency is the fact that except for small amounts of rubber the new formula is made of non-strategic materials, and will not be affected by priorities.

In many qualities the material, which is known simply as Formula C-102, is claimed to surpass aluminum itself. Under

Can YOU stretch a work-week to 8 days?

**It HAS been done on many
assembly jobs . . .
A P-K Assembly Engineer
may point the way for you!**



Whether you make planes, tanks, bombers, or any of the thousands of other products for defense, or for essential civilian needs, in today's vital task of getting more assemblies per man-hour, a Parker-Kalon Assembly Engineer can be a big help! He can help you effect time-savings of 25 percent to 50 percent

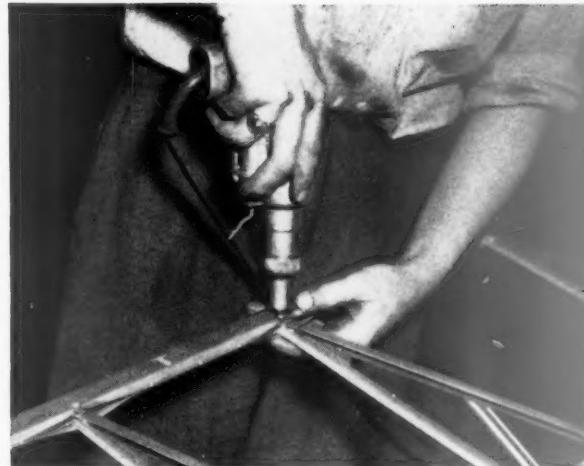
in the many assemblies suited to Parker-Kalon Quality-Controlled Self-Tapping Screws. Wherever the P-K Engineer uncovers a place to use this simpler method . . .

You gain time by eliminating tapping and all its problems . . . fumbling with bolts and nuts . . . riveting in hard-to-get-at-places. Just one simple operation makes fastenings in thin sheet metal or heavy steel, die castings or plastics!

You gain secure fastenings . . . actually stronger than fastenings made with machine screws in tapped holes, or with bolts and nuts and lock washers!

You cut out "slow-ups"! Every genuine Parker-Kalon Screw drives easily and holds tight. The unequalled Parker-Kalon Quality-Control Laboratory routine protects against "doubtful screws" . . . screws that look all right but some of which fail to work right.

CALL for a Parker-Kalon Assembly Engineer to go over your fastening problems. You'll quickly see why some of industry's largest plants regularly use this advisory service. Or send assembly details for recommendations and samples. Parker-Kalon Corporation, 202-204 Varick Street, New York.



TAYLORCRAFT SPEEDS ASSEMBLY of planes for Civilian Pilot Training Program by using Parker-Kalon Self-tapping Screws for many applications. The assembly shown above is typical.



The Screw Industry's Finest Quality-Control Facilities

PARKER-KALON
Quality-Controlled
SELF-TAPPING SCREWS

Give the Green Light  to Defense Assemblies

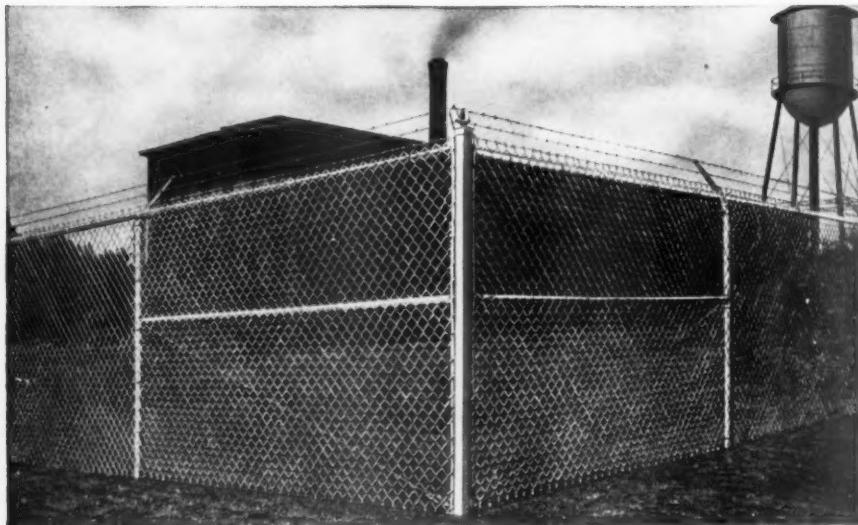


SELF-TAPPING SCREWS FOR EVERY METAL AND PLASTIC ASSEMBLY . . . AND OTHER FASTENING DEVICES

When writing Parker-Kalon Corporation please mention Purchasing

PROTECTION becomes a "MUST"

WHEN PLANNING DEFENSE PRODUCTION



And Complete Protection Calls for

- 1. AN ANCHOR FENCE AROUND YOUR PLANT**
- 2. ANCHOR FENCE ENCLOSURES INSIDE**

Outside and inside protection are BOTH necessary today to ensure "on-time" production of Defense Orders. For spies and saboteurs are seeking every opportunity to delay Defense work and steal Defense secrets. A strong, sturdy Anchor Fence around your plant provides protection against outside sabotage agencies. And Anchor Fence enclosures *inside* your plant, around power stations, transformer installations, chemical, fuel and raw material storage prevent all except your most trusted employees

from reaching vulnerable points. An Anchor Fence can be quickly installed, with our exclusive "drive anchors" which keep it permanently in line in any type soil. It can be moved without loss in case of plant expansion. Send for the Anchor Engineer. He'll give you the benefit of Anchor's years of experience in fence protection—explain our Nation-wide Sales and Erecting Service—show you how to provide effective plant protection with a minimum of expense for guards and policing.

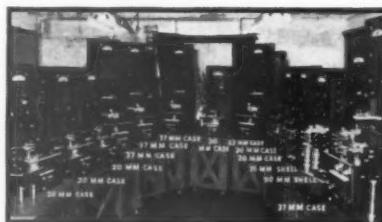


AN ANCHOR FENCE ENGINEER will gladly help you plan complete protection for your plant. Write or wire today to: ANCHOR POST FENCE CO., 6615 Eastern Ave., Baltimore, Md.



gunfire, for example, it resists ripping or shattering. It will not crystallize from vibration as do metallic substances and it is also free from corrosion and pin-hole formation.

MULTICHEKS FOR SHELL AND CASE



■ A wide variety of multicheks for fuse parts, shell, and cartridge case inspection is being produced by The Sheffield Corp.

The multiple checking units can now be arranged to check pinions less than $\frac{1}{8}$ " long and shells or cases up to any size. Recent development has shown that there is no limit to the number of dimensions that can be checked simultaneously. This is because each dimension has its own individual and independent gaging head.

All the gaging heads are connected to one master inspection light, which tells instantaneously if all of the given dimensions are within tolerance or not. This facilitates quick reading. The multicheks now being produced can be used for inspecting the following shell and case sizes: 20 MM, 40 MM, 37 MM, 60 MM, 75 MM, 90 MM, 105 MM, 155 MM for shell, and 3" for shell and case, pinions as small as $\frac{1}{8}$ " long and $\frac{3}{32}$ " in diameter.

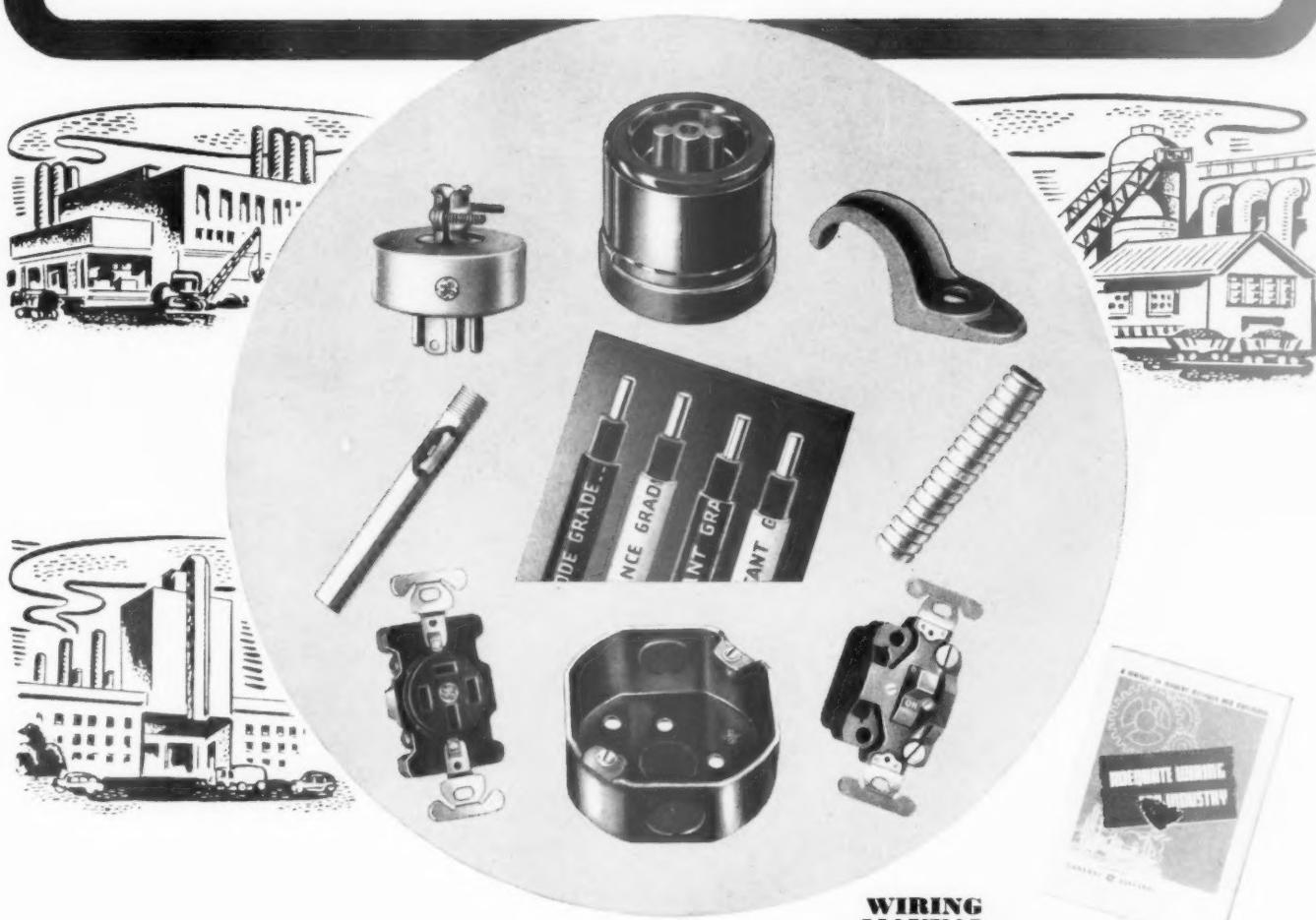
Some have been made with three different gaging head sets, which are interchangeable on the same base. This means that 75 MM, 90 MM, and 105 MM shells can be inspected, for example, on the same multichek, by merely placing on the base the desired gaging head set. Others are constructed so that the operator can roll heavy shells into the gaging units instead of lifting them.

These instruments are accurate within ten millionths of an inch.

DUPLEX UNIT

■ Developed for use in bulk stations, blending plants and refineries, the duplex pumping units made by Blackmer Pump Co., Grand Rapids, Mich., have many applications in the industrial field for handling naphtha, tar, printing inks, and similar liquids and semi-solids. In fact the pumps will handle practically anything that flows through pipes. It is an ideal unit where two different liquids

G.E. Offers WIIRING MATERIALS for Today's Needs



**WIRING
MANUAL
FREE**

General Electric has prepared a manual called "Adequate Wiring for Industry" which describes modern wiring methods and materials. You'll find it helpful in checking the wiring in your own plant. The manual interprets wiring in terms of savings and service.

For a free copy of this manual and for further information about G-E wiring materials see the nearest G-E Merchandise Distributor or mail the coupon.

YOU'LL find exactly the right wiring materials for new wiring systems, for modernization work, and for maintenance in the G-E line. These materials are conveniently available in your territory, too. G-E Merchandise Distributors are located at all key points in the country.

G-E wiring materials all have the same uniform high quality and are designed to be used together and to give enduring service. The line includes conduit, wire and cable and wiring devices.

GENERAL ELECTRIC

When writing General Electric Company please mention Purchasing

General Electric Company
Section CDW-177B
Appliances and Merchandise Dept.
Bridgeport, Conn.

Sirs: Please send me free a copy of "Adequate Wiring for Industry" with information about G-E Wiring Materials.

Name.....

Address.....

City..... State.....

THANK YOU

for your fine cooperation

JOHN A. ROEBLING'S SONS COMPANY
TRENTON, NEW JERSEY

WE WANT TO SINCERELY THANK our many customers and prospects for their understanding cooperation during the present difficult period.

It is no satisfaction to be told that shipment of the Roebling electrical wires and cables you need will not be made for several months—or not at all. Nevertheless, our customers and prospects, as a whole, have faced this situation with fine spirit—in the knowledge that we here at Roebling are confronted with an abnormal production situation which is nationwide and without parallel.

However, we are not using this situation as an excuse to do nothing. We are not callous to your problems and needs. We are doing everything humanly possible...with added men, added equipment, added hours ...to speed up production.

Sincerely yours,
General Manager of Sales

ROEBLING
ELECTRICAL
WIRES AND CABLES

ROEBLING CO.
100 ANNIVERSARY
1841-1941

are to be handled by the same pumping unit or where temporary higher capacity is required. Or it may be operated as a single unit or both pumps may be operated together.

The pumps are their standard bucket design (swinging vanes) with newly developed streamlined inlet chamber which permits the handling of liquids of greater viscosity without any lowering of the volumetric efficiencies. New design built-in relief valves will handle the full capacity of the pumps without shock or end-thrust on the working parts of the pump. Extremely quiet—no chatter—even when used with pre-set meters and quick closing valves.

The general specifications are as follows: Capacity: 50 GPM per pump, 100 GPM with pumps operating simultaneously. Pressure: 100 psi. with lubricating liquids; 75 psi. with non-lubricating liquids. (Units with operating pressures up to 300 psi. and for capacities to 700 GPM are also available). Bearings: pumps for 75 lb.-100 lb. pressures are furnished with double sleeve bearings, which eliminate shaft distortion. Both bearings are sealed against pumpage by ample packing. Pumps for 125 lb.-300 lb. pressures are equipped with anti-friction bearings, either internal or external, depending upon the service.

Pumps, electric motor or gasoline engine, gear case and clutch mechanisms are mounted upon a common bed-plate, making a complete unit of very compact size.

COUPLINGS CAN CARRY LUBRICATING OIL



A flexible coupling which can serve as a connecting medium for oil lubricating lines as well as a coupling capable of transmitting torque, compensating for parallel or angular misalignment, reducing noise and vibration and smoothing out power impulses is added to the "Torflex" line of flexible couplings by Harris Products Company, Detroit, Michigan.

Designed to sell at low cost, a high production assembly speed of the coupling with shafting is facilitated by the way the coupling can be "run-up" without special tools. Special shaft preparation is not needed and the couplings can be used as replacements irrespective of the type of preparation used on the shafting for the old coupling. Any size shafting between $\frac{1}{4}$ inch and

**VALUE
IS MEASURED BY PERFORMANCE**

**AND - -
TOP
PERFORMANCE
MEANS —**

- Greater output
- Maximum production between sharpenings
- Faster feeds and speeds
- Less lost time of machine and operator
- Fewer sharpenings and reduced sharpening costs

**FOR GREATEST CUTTER VALUE
--- Specify BROWN & SHARPE**



Insist on Brown & Sharpe Cutters for every job. Ask for No. 34 Catalog showing the complete line.

Brown & Sharpe Mfg. Co., Providence, R. I., U. S. A.

**BROWN & SHARPE
CUTTERS**

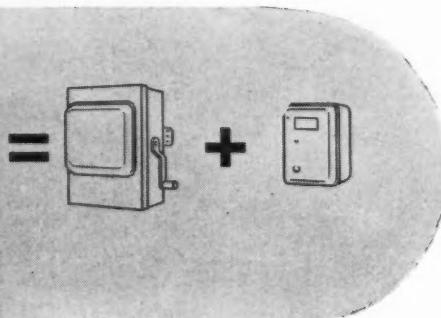
**WANT TO EXPEDITE
TOOLING UP?
COMBINATION
STARTERS
WILL HELP YOU
GET GOING SOONER**

**You can save hours on every
a-c motor-control you install by
using G-E full-voltage combination
starters instead of separate devices.
That means getting vital pro-
duction rolling sooner.**

ONE machine that can do the job of two can save you *time, money*, and valuable *space*. The same is true of this modern motor control.

IT'S SAFER TOO

By combining the manual circuit switch and magnetic starter in a single safety-interlocked enclosure, extra protection is provided—an important advantage where inexperienced workers operate or maintain the equipment. It is impossible to get at live parts of this starter as long as the line switch is closed—and while the cover remains open, the circuit switch cannot be closed to energize exposed parts.



5/16 inch inclusive can be handled by the new style which is of non-reversible type.

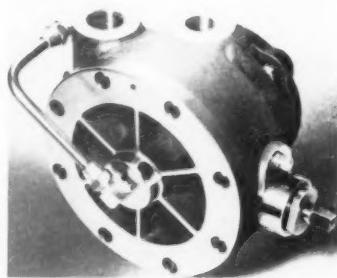
It employs two metal caps, and two rubber bushings. But the spacer, which is required to keep the rubber bushings separated so that they will tighten onto the shafting when the metal caps are screwed together, consists of a nipple and two fiber washers instead of the double end all-metal type. In order that any one coupling can be used with shafting of different diameter, the bore of one cap, bushing and washer of a coupling is increased to accommodate the larger size shafting.

The couplings can be pre-assembled, or can be put together "piecemeal" on the two shafts. Since rotating the drive shaft serves to tighten the couplings, they can be assembled by this means. Otherwise, a pair of ordinary pipe wrenches are the only tools required for assembly or for removal. Grooving the drive shaft to a depth of 1/16 inch is all the preparation required; milling, key-seating, etc., being unnecessary.

Torque capacities range up to approximately 45 lb. inches at recommended usages and will compensate for high parallel and angular misalignment depending on the size of the shafting.

When used as a replacement, previous keyways, holes and flats can be filled with wood or brass or some similar metal to obviate sharp cutting edges.

DUAL VANE TYPE VARIABLE DELIVERY PUMP



An infinitely variable delivery hydraulic pump of dual vane design which employs a unique means of balancing the vanes so that overheating is eliminated, wear is reduced and the pump is virtually breakproof is announced by Detroit Universal Duplicator Company, Detroit, Michigan.

Designed for continuous operation at high pressures, the pump is recommended for use where the possibility of line surges require a "break-proof" pump. Delivery is infinitely variable over two ranges; 4 to 0 gallons per minute and 8 to 0 gallons per minute.

The pump is recommended for continuous duty operation at 1250 lbs. p.s.i. pressures but it can be used where pe-

GENERAL  ELECTRIC

riodic pressures go as high as 2,000 lbs. p.s.i. Increasing or decreasing the rate of delivery is by means of an adjustment screw and can be done while the pump is operating.

The high operating efficiencies and almost perfect balance of the pump, which reduces wear, and eliminates all possibility of overheating are held due to the design of the vanes. Instead of the conventional single blade vane, the pump employs dual vanes. Each vane is beveled around its entire edge so that oil from the oil hole in the rotor can flow around all the edges of the dual vanes. The result is that a "back" pressure, variable to suit individual conditions, can be placed on the vanes from the stator side. Thus, each set of vanes is held against the stator with only a portion of the total operating pressure of the pump. This eliminates all possibility of overheated vanes and reduces wear to a minimum. The bevelling also serves to hold the vanes "centrally" with respect to the housing, thereby reducing housing wear.

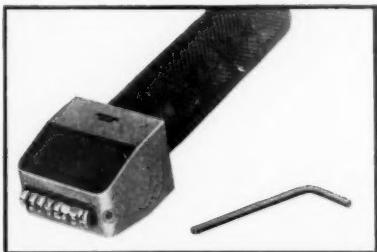
Another feature of the pump is the method by which the split stator is so arranged that either or both halves can be moved to increase or decrease the delivery rate.

Housing of the pump is for flange mounting with adjustment screws at opposite sides.

Intake and output connections are at the top. Any oil leakage from the inside of the pump into the outer part of the housing is returned to the intake through a return line.

Vanes, rotor and stator halves are of hardened and ground steel as is the splined drive shaft.

HAND STAMP HOLDER



Incorporating a new "shock-proof" feature, a newly designed interchangeable hand stamp holder is offered by New Method Steel Stamps, Inc., Detroit, Mich. The holder has a special wedge lock which prevents the individual hand stamps from loosening after continued use of the holder.

The wedge lock holds the stamps both sidewise and endwise against movement. Instead of using several set-screws at sides and ends, as is usual in holders of this type, a single set-screw is used at the end to retain all the stamps in posi-

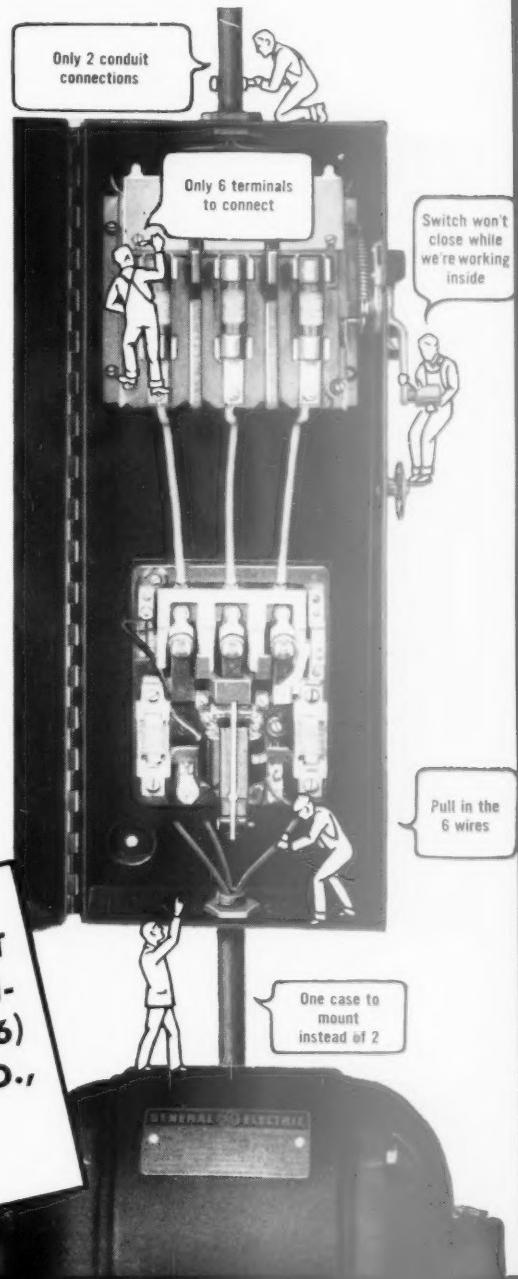
THAT'S RIGHT...
AND THEY'LL BE A LOT
EASIER TO CHANGE
OVER FOR OTHER
PRODUCTION, TOO

Combination starters are taken out
and re-installed more quickly than
separate devices. That's why they
multiply savings on changeover.

AUTOMOTIVE manufacturers have long recognized that the right control for them is the control that has everything in one "package." That's because, with mass-production methods, they periodically change over their equipment to re-adapt it to changing demands. It's especially during this changeover period that savings are made—you make the original installation savings all over again each time the motor, or control, or machine is relocated.

Do as the leading automotive manufacturers do—use G-E combination starters for your new plant equipment. Your G-E agent or the nearest G-E office can give you full information.

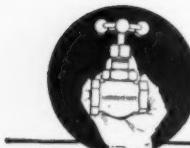
SEND FOR "HOW TO GET
MORE FOR YOUR CON-
TROL DOLLAR" (GES2456)
GENERAL ELECTRIC CO.,
SCHENECTADY, N. Y.



GENERAL ELECTRIC



are important in
NATIONAL DEFENSE



ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO U.S.A.
NEW YORK CHICAGO
BOSTON PHILADELPHIA
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

When writing The Lunkhenheimer Co. please mention Purchasing

tion. The stamps may be locked and unlocked quickly by the single set-screw, which is of the socket type, using a wrench of hexagonal style. The body of the holder is large and substantial. The shank is knurled, and is also unusually sturdy, with end hardened and tempered to prevent chipping or mushrooming under repeated hammer blows.

Primarily designed for use where several numerals or letters must be used to designate the part marked, yet may be changed frequently, the use of interchangeable stamps permits not only frequent changing, but also replacement where numerals or letters become worn, thus reducing replacement cost. The holders are made to accommodate any number of characters and all sizes of stamps. They are also available with shanks to fit presses, etc.

OZONE WATER PURIFIER



■ A completely automatic, self-contained purification plant that literally burns the bacteria out of water has been developed by the Techmierc Engineering Company, Los Angeles, Calif. The unit, known as the "Sterozone," was designed for use in army camps and for use of troops on maneuvers, but has wide industrial and municipal applications.

The unit has a rated capacity up to 9000 gallons per hour and automatic parallel operation of units can be made to supply larger requirements.

Raw water is pumped from the source through a filter to remove suspended matter and then passed to an absorber chamber where ozone, generated by a high frequency silent electric discharge oxidizes the bacterial contamination and delivers pure, sparkling fresh water that has no taste or odor.

Unlike water that is disinfected by the addition of chlorine there is no danger of overtreatment which may result in an unpleasant taste that may force troops to prefer untreated, contaminated water.

The sterilizing agent employed is ozone gas, generated within the unit itself from filtered and dried air. No supplies of chlorine gas or other chemicals that are now urgently needed for the manufacture of munitions are required.

Power is supplied from an automatic gasoline-engine driven 10 KVA, 220 V, 3-phase power plant. This unit is self-

THE WILL TO MAKE GOOD STEEL



MAKING the kind of steel our country demands for its defense program requires a thorough knowledge of the steels needed, an organization of skilled steel makers, the best of steel making equipment, and—above all—the **WILL** to make good steel.

The Copperweld Steel Company is producing the following Aristoloy Steels particularly for National Defense: **RIFLE AND GUN BARREL QUALITY, GUN QUALITY, SHOT QUALITY, BULLET CORE AND AIRCRAFT QUALITY.**

"SPECIAL QUALITY" TOOL AND ELECTRIC FURNACE ALLOY STEELS

CARBON TOOL STEELS

ALLOY TOOL STEELS

STAINLESS STEELS

NITRALLOY STEELS

AIRCRAFT QUALITY STEELS

BEARING QUALITY STEELS

**ARISTOLOY
STEELS**

ARISTOLOY STEELS

COPPERWELD STEEL COMPANY WARREN, OHIO

**"Here's why we chose
SELECT-O-PHONE
for inside telephoning
and man-finding."**

"First, we were offered our choice of *purchasing* either outright or on divided payments, or of *renting*. A sizable system rents for only a few dollars weekly."

SELECT-O-PHONE

The COMPLETE Private Automatic Telephone and Man-finding System



Loud-and-private-speaking Executive Station. Name-touch operation.



Staff Station. Available in desk and wall types.



FINGERTIP CONTROL OF YOUR ORGANIZATION. Select-O-Phone puts you through to anyone, anytime, anywhere. City telephone remains available.



MAN-FINDING. Moving individuals can be paged from any Select-O-Phone. Men paged answers from any nearby Select-O-Phone station.



3-CORNED CONVERSATION. Inside information secured instantly via Select-O-Phone, while telephoning customer or long distance.



ABSENTEE CONFERENCE. Secret joint conversation among widely separated individuals. Saves time; promotes production. Does not block rest of system from normal operation.

COMPLETE in service features

"Second, we found that Select-O-Phone offered all desired features including: name-touch calling; loud-speaking Executive Station with privacy handset; paging by all stations; executive right-of-way; secret conference facilities. All these and other optional features were available with 100% trunkage, which means that all stations can be in use on separate secret conversations simultaneously; a conference in progress leaves rest of the system open for regular calling."

Unique in design advantages

"Third, we found that Select-O-Phone has a central 100% automatic switchboard, uses no cables and has exclusive unit construction with plug-in interchangeability and built-in provision for adding stations. This enables us to move a station or add a station any time by running a simple wire. We found that 34% of Select-O-Phone systems in use are 20 or more years old, evidence of durability, ability to keep pace with a firm's growth, and low cost of maintenance."

Purchased by leaders

"Fourth, we looked into the firms who have installed and are installing Select-O-Phones. We found leaders in every line including manufacturers, banks, institutions and offices. Particularly interesting were the recent installations in airplane plants, domestic and outlying defense projects and important organizational centers."

PURCHASING AGENTS: Get details of this long-established private automatic system embodying advanced up to date features. The facts are valuable. Mail coupon now.

Can be RENTED, or purchased



SELECT-O-PHONE COMPANY

EST. 1916 — 1005 EDDY ST., PROVIDENCE, R. I.

Send free book "Fingertip Control" and details of your new Rental Plan to
Mr. _____ Position _____
at the address below. (Write your firm and address on margin below.)

FOR BOOK AND RENTAL PLAN MAIL COUPON!

starting and self-regulating. The only attention required is lubrication and fueling. All mechanism is driven by a 5 h.p., 220 V., 3-phase electric motor on which is direct mounted the treated water supply pump and coupling. Connected to the other end is the raw water supply pump. Also driven from the motor shaft by V-belt are the compressor, cooling water circulating pump and the evaporative cooler. All of these mechanical elements are mounted in a separate power chassis, vibration-insulated from the rest of the unit on a three-point rubber suspension, and carried on ball-bearing rollers for ease of inspection and removal for lubrication or maintenance.

HIGH-POWER FLOODLIGHT-INC CONCENTRATOR



■ Designed for high bay lighting in industrial plants, auditoriums and stores with high ceilings especially, a concentrating floodlight bulb has been developed in the Birdseye Division of Wabash Appliance Corporation, Brooklyn, N. Y. The bulb is said to deliver a concentrated flood of light that cuts through distance, haze and smoke to provide brilliant illumination even in foundries and factories where high ceilings and traveling cranes or other obstructions make impracticable the installation of lights closer to the work plane.

The bulb is designed especially to force down to the work plane level the full light that the filament develops. The filament is mounted at the exact focal point of the hump-shaped parabola of the bulb, so that light rays are forced straight out of the bulb without waste. The inside of the bulb is lined with pure polished silver to form a permanently brilliant reflector that cannot be dimmed by dirt, fumes, or smoke. The 1500 watt industrial size is illustrated. Twelve smaller sizes are available.

MORE CHIPS PER MINUTE



with CIRCLE "C" SUPER
HIGH SPEED STEEL

No matter what the unit of time—
minute, hour, or day — the *true
measure* of a cutting tool's effectiveness
can be judged by the *net amount* of metal it removes in a given period.

CIRCLE "C" Cutting Tools are
constantly demonstrating their
capacity to work at 25% faster
machine speeds, with greatly increased
cuts and feeds and far fewer shutdowns
for re-grinds on the hard and
heat-treated alloys used in produc-

tion of *shells, aeroplane engines
and other armament*. Thus, this
high cobalt-tungsten Super High
Speed Steel, distinguished in a
peace-time economy for its prodigious
chip removing ability, now occupies a unique place among steels
in Defense industries. *Although a tungsten steel it actually conserves tungsten through greater production as compared with other tungsten high speed steels.*

FIRTH-STERLING

STEEL COMPANY

OFFICE AND WORKS:
McKEESPORT, PA.
BRANCH WAREHOUSES:
NEW YORK CHICAGO
HARTFORD PHILADELPHIA
LOS ANGELES DAYTON
CLEVELAND DETROIT

BOOST PRODUCTION

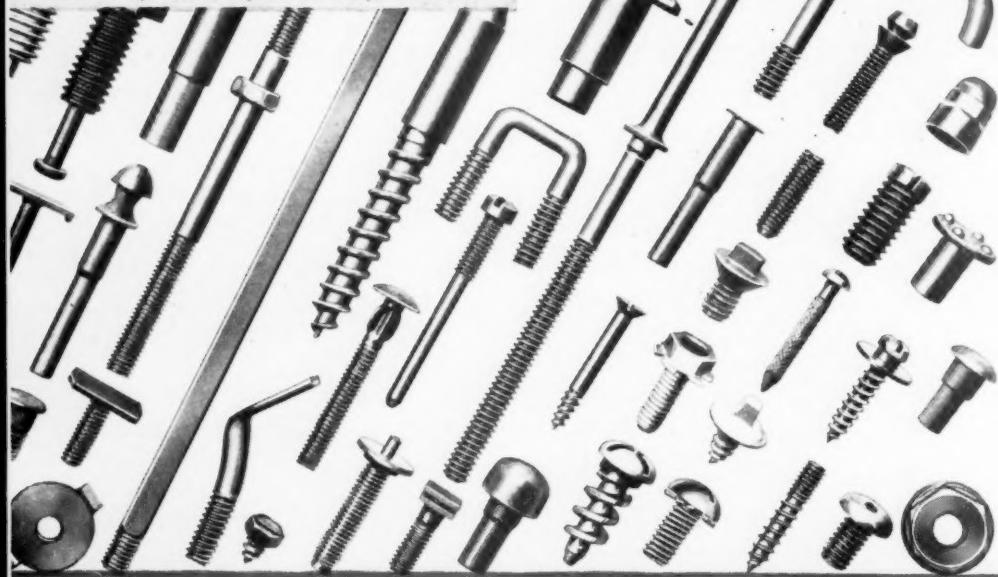


The regular HOLTITE line comprises a complete range of screws, bolts and allied fastenings.

For smooth, uninterrupted production specify HOLTITE fastenings. By eliminating idle necks in assembling operations these uniform, durable fastenings speed up production and insure delivery on time! Strength far beyond ordinary demands, tested accuracy and uniformity, rigid inspection—all combine to insure dependable performance.

For maximum efficiency and economy, specify HOLTITE on your next fastening order. There's a HOLTITE product for every fastening requirement—regular or special.

Special parts and fastenings made on order exact to samples, blueprints, or specifications.



HOLTITE -Phillips- Recessed Head Screws & Bolts

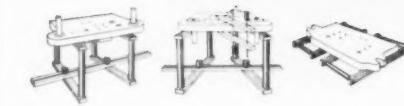
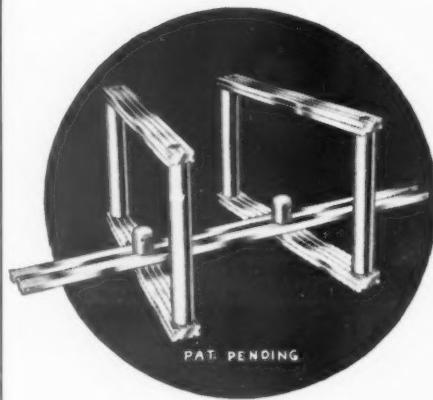
By cutting assembly costs up to 50% and more, these modern fastenings are now used by every manufacturer interested in reducing assembly time, costs, spoilage and injuries.



CONTINENTAL SCREW COMPANY

New Bedford, Mass. Warehouses at Detroit and Chattanooga

DIE CRADLE



A handy tool for diemakers, known as the "Aero Die Cradle," has been announced by the Aero Tool and Die Works, Chicago, Ill.

In effect, the tool is a universal parallel unit, adjustable in length to accommodate varying sizes of dies, jigs and metal parts, with parallel vertical supports and parallel top cross-pieces holding the work in a perfectly level position.

The unit eliminates makeshift methods of supporting such work, and assures correct alignment while drilling, counterboring, tapping, milling or grinding. Because it incorporates several safety and time-saving features, the unit is said to be most helpful in speeding up production and promoting the safety factor on the aforesaid operations.

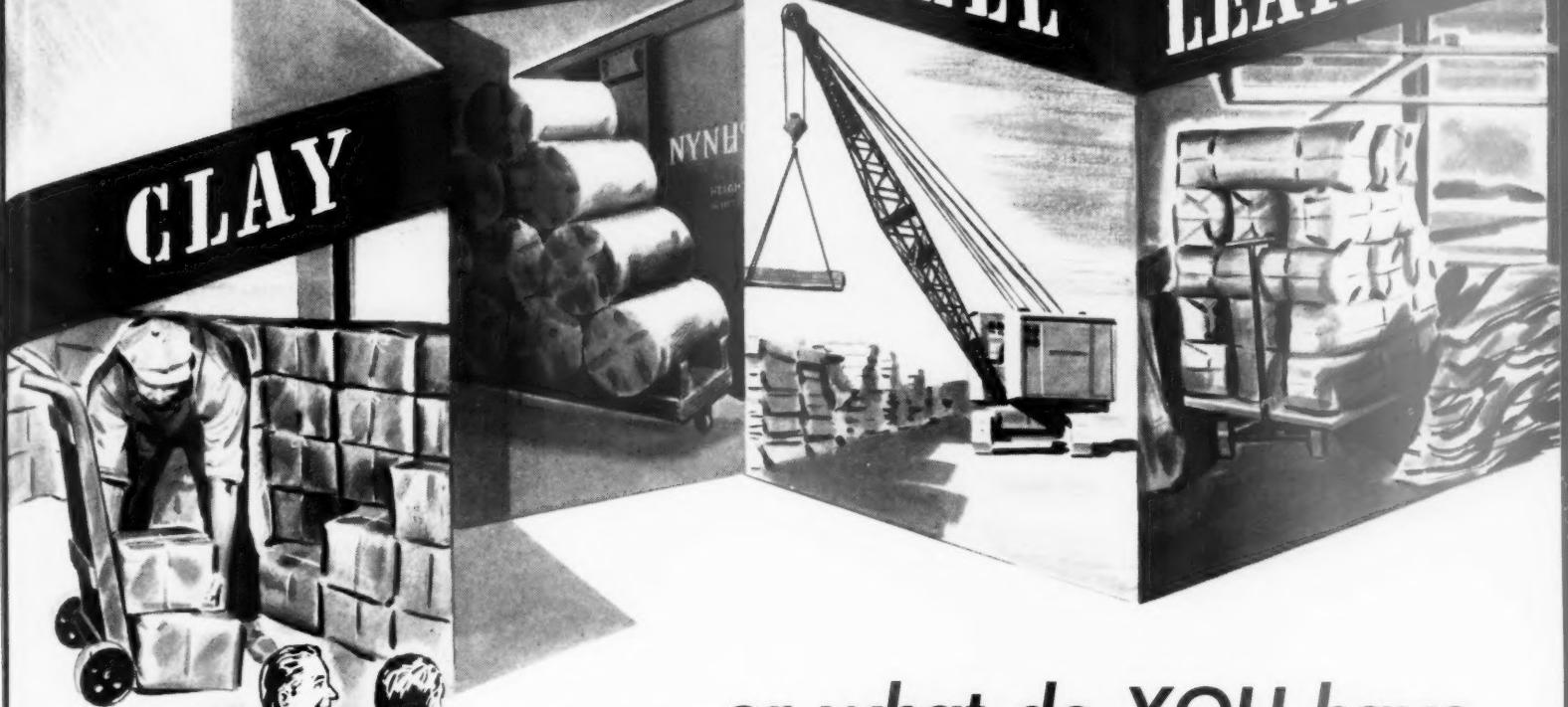
Two thumb-screws adjust the cradle to any desired length. Standard height of parallels is 7 inches, with an adjustment for length up to 20 inches. The unit is made of high grade steel, hardened and ground to close tolerances which assures accuracy. Sturdily constructed and lightweight, it may be moved about easily.

REMOVAL OF STAIN ON BRASS

A troublesome problem in the manufacture of brass cartridge cases has been solved through the use of a common and well-known chemical, ferric sulfate, according to the Merrimac Division of Monsanto Chemical Company, Everett, Mass.

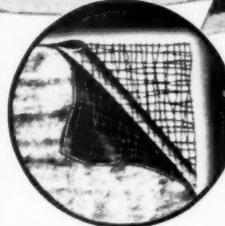
Ugly red cuprous oxide stains and black smut are frequently left on the surface of the brass after heat treating operations used in cartridge case manufacture, and they have been difficult and sometimes impossible to remove by

TEXTILES STEEL LEATHER
CLAY



... or what do YOU have
to WRAP and PROTECT?

FIBREEN



FIBREEN is 6 ply: TWO layers of strong kraft, reinforced with TWO layers of crossed sisal fibers embedded in TWO layers of special asphalt — all combined under heat and pressure. FIBREEN is pliable and clean — will not scuff—stands an astonishing amount of abuse and exposure. It is used either as a wrapping or a lining material.

Soak it — twist it — try to tear it!

Only when you get a sample in your own hands can you realize that a paper can be so strong—so tough—and impervious to moisture. Write for sample.

FIBREEN is a product of The Sisalkraft Co. — also manufacturers of Sisalkraft, Sisal-X, Sisal-Tape and Copper-Armored Sisalkraft.

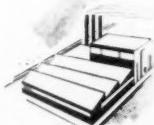
There's little or no similarity between these products. Each presents an entirely different problem in protection, during inside and outside storage as well as in transit—but FIBREEN serves them all—and hundreds of others too, large and small, in all types of industry.

Perhaps it can serve you. In factory after factory FIBREEN is doing a "better" job . . . speeding up the work in shipping rooms, reducing costs, and guarding against claims for damaged goods.

FIBREEN is amazingly strong and tough. It's waterproof, dirtproof, pliable and clean . . . an ideal wrapping and protective material, available everywhere at low cost.

Let us send you a supply of FIBREEN without cost or obligation, for you to try. Let The Sisalkraft Co. shipping experts offer recommendations. Simply write, explaining what you ship and how you now pack it.

THE
SISALKRAFT
CO.
205 W. WACKER DRIVE • CHICAGO, ILL.
NEW YORK • SAN FRANCISCO • LONDON • SYDNEY



SERVING INDUSTRY . . .

. . . CONSTRUCTION AND AGRICULTURE THROUGHOUT THE WORLD

Today,
**Almost Without Exception,
Every Motor is a Good Motor —**



SUPER PROTECTION

But SUPER PROTECTION Gives Added
Value to HOWELL Motors—and Here's Why!

1. SUPER PROTECTION against accidental abuse—motor frame and base non-breakable.
2. SUPER PROTECTION against dripping liquids and falling particles—air openings covered top and sides—no working part exposed.
3. SUPER PROTECTION against winding failures—windings heavily insulated, using covered enamel wire triple-treated with moisture-proof insulating varnish.
4. SUPER PROTECTION against destructive vibration—rotors dynamically balanced to close limits—completed motors precision tested. And all this is now yours as standard motor construction. Write for Bulletin RS-60.

HOWELL ELECTRIC MOTORS COMPANY
HOWELL, MICHIGAN . . . *Representatives in All Principal Cities*

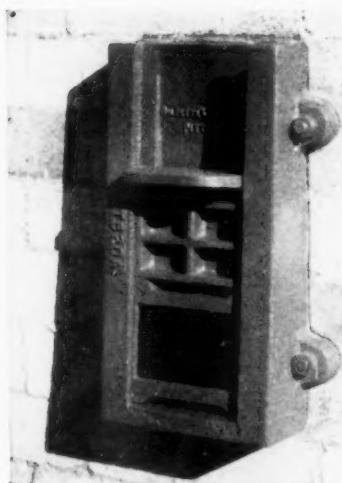
the usual acid pickling methods. By using a pickle solution containing ferric sulfate in addition to the usual acid, however, complete removal of stain is being achieved.

Sulfuric acid alone will remove the more common black cupric oxide, but it is not effective against smut or red stain, with the result that these blights have been a frequent cause of trouble in the pickle room.

To assure complete elimination of stain, ferric sulfate should be used in each pickling operation, starting with the first anneal. If any red cuprous oxide or black smut remains after pickling, and is subsequently drawn into the piece, it becomes difficult to remove.

The use of ferric sulfate in pickling cartridge cases not only improves final finish but produces a finish more satisfactory for intermediate draws.

FURNACE INSPECTION DOOR



■ The Gillette Kiln Sales Company, Pittsburgh, Pa., has developed a furnace inspection door, especially designed to withstand high temperatures. This door is applicable to various types of industrial furnaces, on heat treating furnaces and on boilers and kilns having continuous temperatures up to 2500° F.

Of simple, rugged construction, the door consists of a cast-iron slide which rides vertically in a cast-iron frame assembly as shown in the illustration. This door has no moving parts to warp and stick. When closed, the slide rests against the bottom of the frame with its upper section, ribbed to dissipate the heat, closing the opening in the brick-work. To open, the slide is raised to bring a framed, rectangular piece of Pyrex heat resisting glass opposite the port hole. When an instrument or tool is to be inserted into the furnace, the slide has only to be raised completely above the brickwork port.

The door is easily installed on new or

existing furnaces. The anchor bolts span three courses of standard firebrick, and thus are easily inserted, while the opening has the width of a standard firebrick.

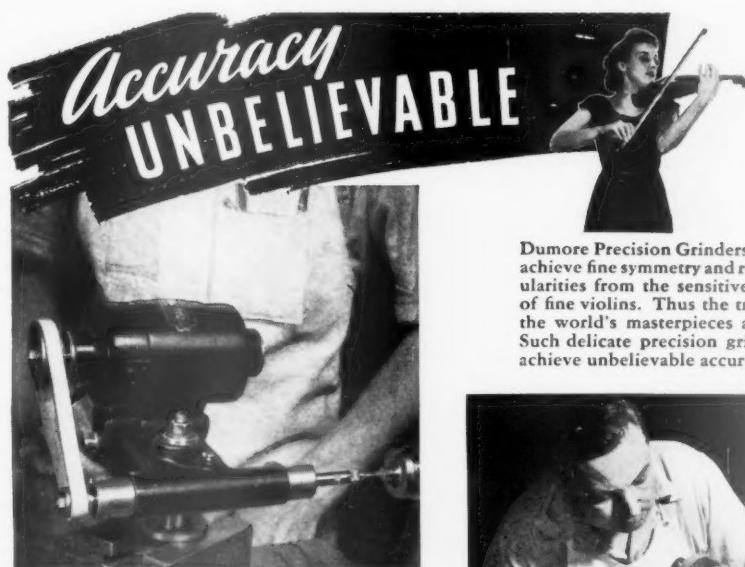
VERTICAL TRIPLEX POWER PUMP

■ A high pressure vertical triplex power pump is supplied by Worthington Pump and Machinery Corp., Harrison, N. J., in eight sizes, for pressures up to 9800# and capacities up to 51 GPM. This pump is of the vertical triplex single acting plunger type and particularly suited to

applications where small capacities and high pressures are required, as for the operation of hydraulic presses, manufacture of plastics, for roll balancing in steel mills and, to an appreciable extent, in oil refineries on special process work.

This pump has no gears and is especially designed for use with built-in gear head motors, although it can be arranged for V-belt drive.

This pumping unit is very compact and has high efficiency. One of the important features of its construction is that its plungers are outboard and there is a dry joint between the liquid cylinder and



A Dumore No. 11 grinds a small bushing with uncanny precision. Designed to offer the advantages of larger Dumore Precision Grinders, at low cost. The No. 11 will swing a 2" straight grinding wheel for external work, and will grind internally a hole $\frac{1}{8}$ " or larger in diameter to a depth of $2\frac{1}{2}$ "—smaller diameters to a depth of 1". Wt. 11 lbs., $\frac{1}{4}$ H. P. dynamically balanced motor. Speeds of 6,900 and 30,000 R. P. M.



Dumore "off-hand" grinders are often referred to as the handiest tools in the shop. Here a Dumore No. 10 is used to touch up a forming tool mounted in a punch press, thus saving set-up time and cutting costs.

Dumore Precision Grinders are used to achieve fine symmetry and remove irregularities from the sensitive gut strings of fine violins. Thus the true tones of the world's masterpieces are assured. Such delicate precision grinding must achieve unbelievable accuracy.



Small but mighty is the Dumore No. 14 Tom Thumb, here used in sharpening a hob. It is a rugged little member of the Dumore family with pre-loaded ball bearing spindle with positive lubrication, removable tool post and precision design of frame, as well as Dumore's interchangeable chuck set-up for internal work. Wt. $6\frac{1}{4}$ lbs., $\frac{1}{4}$ H. P. Universal motor. Two speeds—10,000 and 22,500 R. P. M. Steel carrying case and accessory kit (2 wrenches; $\frac{1}{8}$ " chuck assembly; 1 belt; 3 mounted wheels) available.

MAIL THIS COUPON FOR VALUABLE

Dumore
PRECISION
Grinders

BOOK ON PRECISION GRINDING

The Dumore Co., Dept. 351-M Racine, Wis.

Send me "Care and Operation of Portable Precision Lathe Grinders"

Send name of nearest distributor.

Name _____

Firm Name _____

Address _____

City _____ State _____

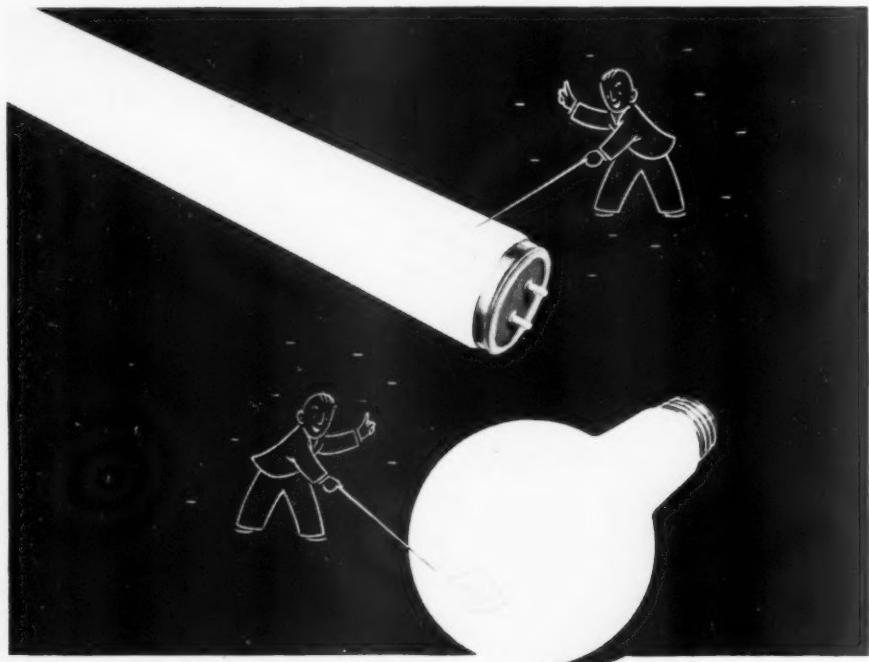
power frame thus eliminating the possibility of leakage of the liquid being pumped into the crankcase, effectively preventing contamination of lubricating oil.

STEEL-GRIP FINGER GUARD

■ A practical finger guard, or finger stall, combining tough leather and flexible lastex has been designed by the Industrial Gloves Company of Danville, Ill. This safeguard is comfortable, clean, easy on, easy off, light weight and durable. Gives protection on fingers and thumb, in any combination, to buffers,

polishers, sanders, grinders, operators of stamping-out presses, assemblers of small parts, book binders, trimmers, mechanics and machine operators, both women and men. May be worn under glove for extra protection. Does away with tender skin due to taping fingers and the frequent trips to First Aid room for tape or bandage. If worn with leather on back of finger, it protects knuckles from raps, cuts, abrasions. May also be had in heavy split leather, light weight kid leather or wool felt. The lastex feature makes it snug fitting, flexible and porous for ventilation.

When Your Lamps Wear "DIAMONDS"



You're Sure of CHAMPION Performance

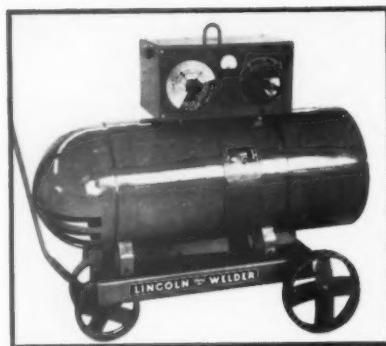
Look for the Champion Diamond mark on your Fluorescent and Incandescent Lamps. The diamond is an appropriate symbol of security when it comes to lamps. It identifies them as products of controlled quality, made

since 1900 by an organization that has dedicated its entire skill, experience and resources to the proposition that there shall be no better lamp than Champions... Ask your regular supply house about them.

*Champion Lamps are licensed under General Electric Co.
incandescent and fluorescent lamp patents*

CHAMPION LAMP WORKS
Lynn, Massachusetts
A DIVISION OF CONSOLIDATED ELECTRIC LAMP CO.

ARC WELDER CONTROL BOX



■ Further improvement in dual continuous control for arc welding machines, in the form of a new welder control box of advanced design and construction, is announced by The Lincoln Electric Company, Cleveland, Ohio.

Enhancing the benefits of dual continuous control, the box prevents accidental contact with live parts, increases accessibility, permits wiring with flexible or rigid conduit, or rubber-covered multiple-conductor cable and eliminates dangers from unintentional loosening of the lifting hook.

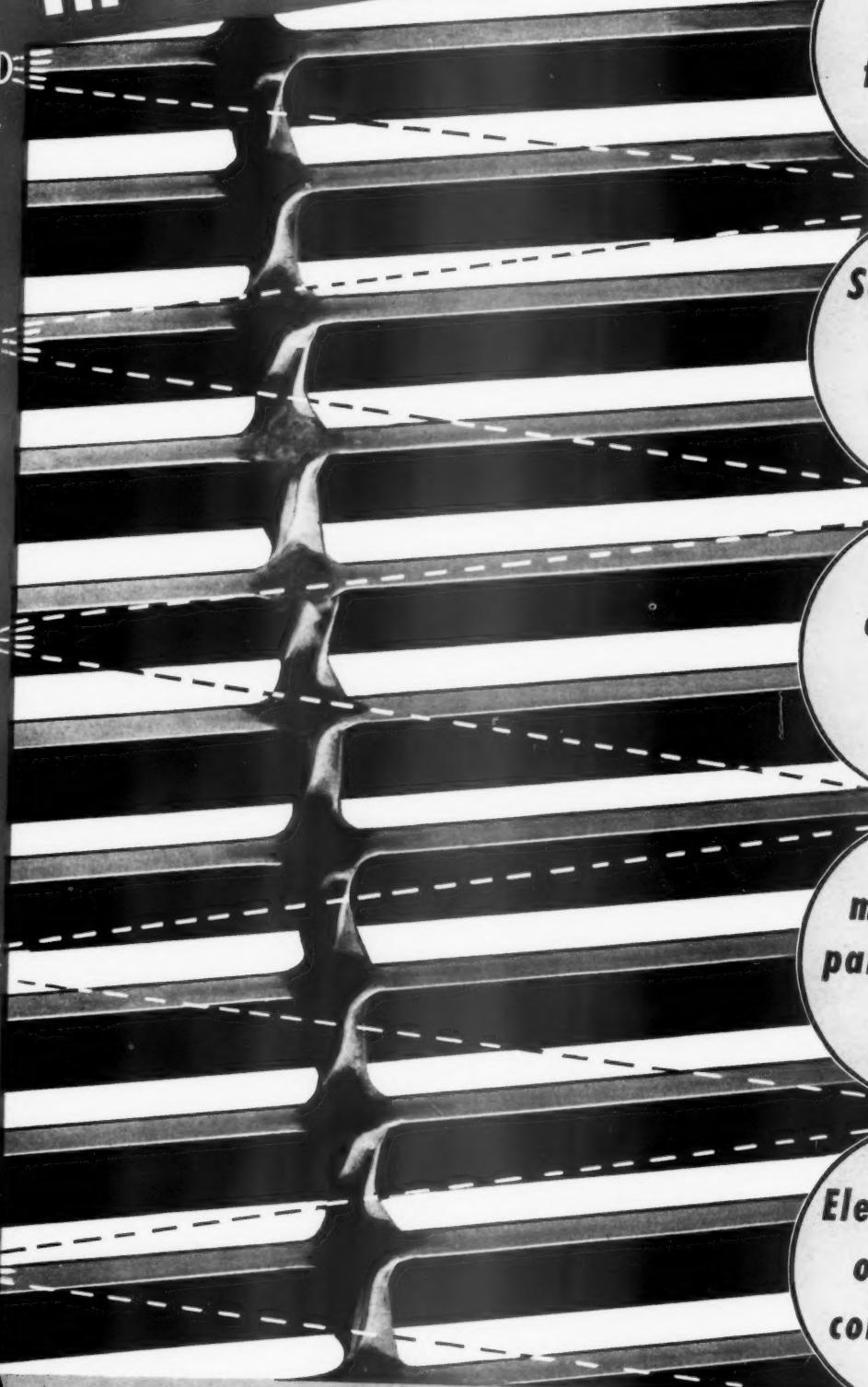
An important feature is the fact that there is a separate compartment for all a.c. circuits, including push button, and another separate one for d.c. terminals.

Both a.c. and d.c. compartments have a snap catch which holds the door in closed position. The a.c. compartment door also has screws for locking to prevent any unauthorized person from opening the compartment and touching live parts. The catch, however, holds the door in closed position in case the screws should accidentally or temporarily be left out of their proper places. On the d.c. compartment, the snap catch feature of the door makes the terminals readily accessible without the use of tools and, at the same time, provides a complete cover for the terminals when the door is closed.

BABBITT METAL

■ A babbitt metal for bearings subject to high pressures and temperatures has been developed by Magnolia Metal Company, Elizabeth, N. J. This metal has a tensile strength of 17,500 lb. per sq. in., a yield point of 6,500 lb. per sq. in., a Brinnell hardness of 27, and its pouring temperature ranges from 950 to 1,000 deg. Fahr. The high softening and melting temperatures make the metal resistant to extreme local heat. Its unusual strength makes the metal adapted to very heavy bearing loads, such as are encountered in railroad service, heavy rolling mill machinery, and paper mill machinery. The nickel treatment gives the metal a hard glossy surface, desirable for generators, motors and other high speed application.

INVESTIGATORS
FIND THESE 5 OUTSTANDING FEATURES
in Blaw-Knox GRATING



*Non-slip
because of
the twisted
bar*

*Self-Cleaning
no sharp
corners to
clog*

*Maximum
open area
for light
and air*

*Easily
maintained -
paint reaches
entire
surface*

*Electroforged
one-piece
construction*

BLAW-KNOX DIVISION of Blaw-Knox Co.
FARMERS BANK BUILDING, PITTSBURGH, PA.

Send for

FREE
paper weight
size sample

NAME _____

STREET _____

CITY _____

STATE _____

BATTERY CHARGERS FOR ELECTRIC TRUCK BATTERIES

■ **Fan-cooled** copper-oxide battery chargers for charging 12-, 15-, or 18-cell electric truck lead batteries, or 16- to 24-cell Edison type batteries, right where they are used, has been announced by the automotive sales section of the General Electric appliance and merchandise department, Bridgeport, Conn. They operate with a high starting rate which is automatically reduced to a safe finishing rate when the battery reaches approximately 80 to 85 per cent of complete charge.

These improved chargers can be installed easily anywhere in the operating territory of the trucks when 3-phase a.c. power is available. They save time and battery power lost when trucks must be run to and from a central charging station located at a remote point. Noon-hour boosts can also be given to batteries. The chargers occupy less than three square feet of floor space, require no base or mounting bolts, and can be readily transferred to another point when desired.

Operation of these chargers is simple. After initial adjustment is permanently made by the maintenance electrician, the

truck operator merely plugs in the battery and turns on the starting button, which performs the dual function of starting the rectifier and presetting the timing of the finishing charge. There are no other external controls. Initial adjustment is made by means of a terminal board containing five coarse and five fine steps, giving a total of twenty-five steps of output adjustment. This terminal board is located within the casing, concealed by a hinged panel.

Safety features are provided. If for any reason the ventilating fan stops, an air-operated switch opens the control circuit and stops the rectifiers. In the event of a power failure the rectifier will stop charging but the battery will not discharge through the rectifier. On resumption of power, the rectifier will automatically resume charging. The charger automatically shuts off when the charge is completed. Also the charger can be stopped manually before the charge is completed, simply by turning the button to "zero" and removing the charging plug.

Maybe YOU don't need Pneumatic Screw Drivers

... but this one illustrates how NOPAK Valves and Cylinders may be used to meet urgent demands for Special Production Tools

A "dust explosion" hazard in a certain plant made it necessary to develop a battery of screw drivers with spark-free motors and friction-free mechanisms. Air powered, air controlled, screw drivers solved the problem quickly, economically, efficiently!

Though *specially built*, these machines were made up largely of standardized units mounted on a simple base and pedestal. A standard Model D NOPAK Cylinder provides the vertical movement. A standard NOPAK 4-way, Foot Operated Valve provides precision control. Other "ready made" units are the Air Turbine for rotary power, Pressure Gauge, Lubricator, standard shafting and piping.

Here, then, is a new tool, developed with a minimum of new patterns, new castings, new stampings — without costly delays for special production. Similar applications of NOPAK Valves and Cylinders may help you lick a defense "bottleneck" in your plant.

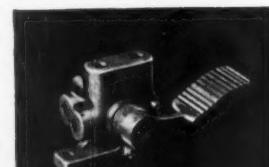
Write for suggestions and literature.

GALLAND-HENNING MFG. COMPANY

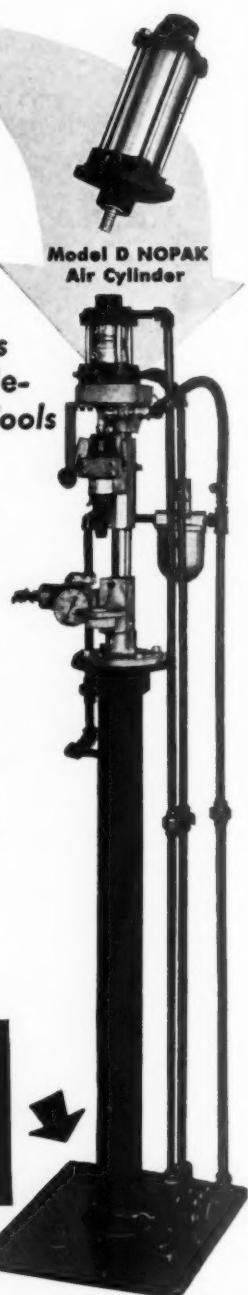
2761 S. 31st St. • Milwaukee, Wis.

Representatives in Principal Cities

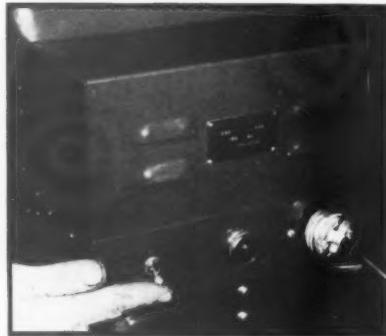
NOPAK VALVES and CYLINDERS
DESIGNED for AIR or HYDRAULIC SERVICE



NOPAK 3- and 4-Way Foot Operated Air Control Valve



DOALL RECTIFIER

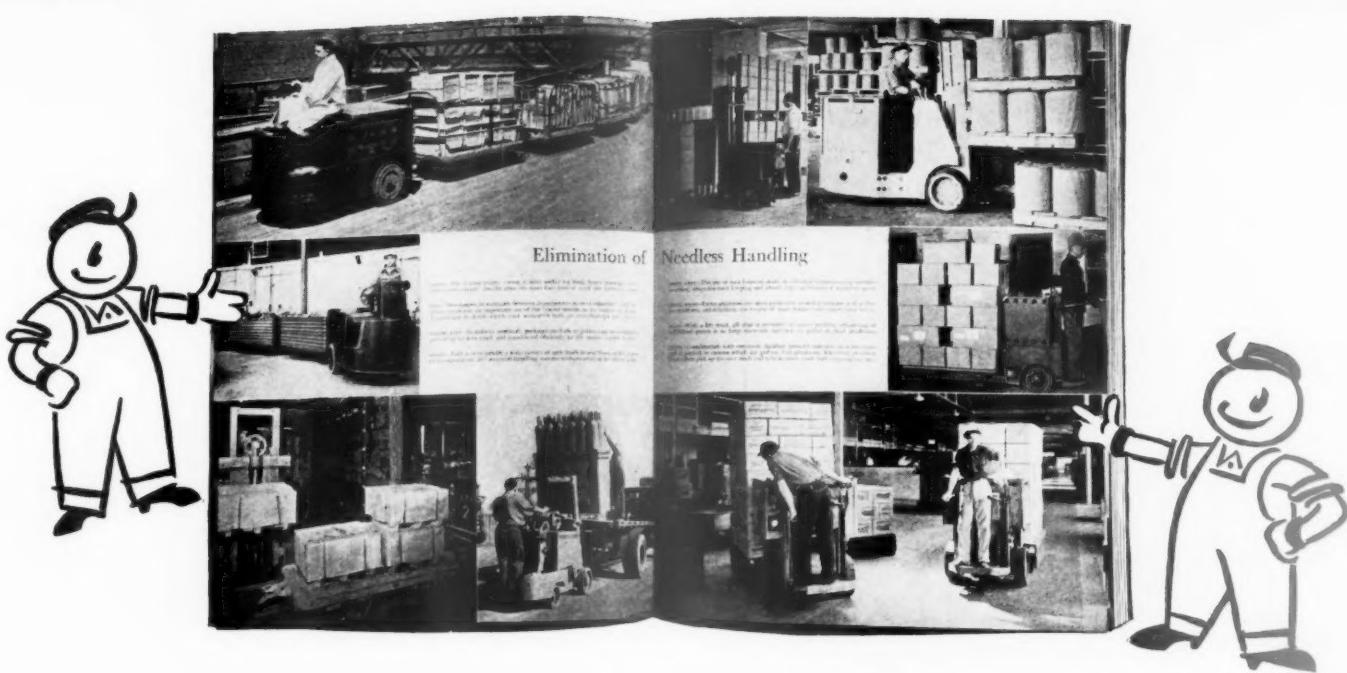


■ **Simple, compact, inexpensive** are features contained in the Doall rectifier released by the Savage Tool Company, Savage, Minnesota.

The rectifier will be of special interest to those plants where alternating current must be transformed into direct current for the operation of electro-magnetic chucks. There are no moving parts to wear out or servicing costs as is common in motor generator plants.

Packed in a self-contained 11" x 4 $\frac{3}{4}$ " x 7 $\frac{3}{4}$ " welded steel case, it is operated from a toggle switch and contains a built-in pilot light to show when it is in operation. The unit is completely fused to prevent damage to either rectifier or magnetic chuck.

Built specifically for operation of electro-magnetic chucks supplied with the Doall grinders, the rectifier, however, will operate any electro-magnetic chuck of from 6" x 18" to 8" x 24" in size.



YOURS for the Asking!

Yours for the asking is *Modern Material Handling*, 1941 edition, a 24-page 8½ x 11 illustrated booklet giving you much useful information on the tractor-trailer system, the skid-lift-truck system, the pallet-fork-truck system and various special industrial-truck handling systems. Tells you how to judge which one or combination of these systems is best adapted to your handling operations.

Also included is a condensed description of the advantages of steel-alkaline storage batteries as industrial-truck power units, useful recommendations as to selection of batteries for continuous 24-hour-a-day operation, electrical data and dimensions of trays, steel cradles, and demountable steel boxes for

batteries ranging from below 10 kwh to above 60 kwh of rated capacity.

This booklet is useful not only to users of industrial trucks but also to those who are considering the installation of their first truck. Address Edison Storage Battery Division of Thomas A. Edison, Inc., West Orange, N. J.



V-BELT DRIVEN ROTARY AIR PUMP

■ The newest addition to the line of Gast Manufacturing Corp., Benton Harbor, Mich., is a V-belt driven rotary air pump especially suited for such operations as paper feeding, lithographer's film plate holders, milking machines, and a variety of other slow-speed applications. It is specifically designed to meet the demand for a V-belt driven pump of good capacity in cubic feet per minute that will provide medium vacuum service. The advantages claimed for

this pump are slow, quiet operation, long life, ease of installation, regardless of shaft height or diameter, and low power required in proportion to the large air volume delivered. Simply by changing the size of the motor pulley, this pump is readily adapted for operation with $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$ and $\frac{3}{4}$ hp. motors. A heavy duty shaft and large ball bearings amply take care of belt side-thrust. The pump sheave incorporates a cooling fan. The rotary design provides operation without gears, springs or valves, which is said to result in unusually economical and trouble-free performance.



Where Haste Makes Waste . . .

As any skilled workman knows, toolmaking is a matter of infinite patience and scrupulous accuracy. No jeweler fashioning some beautiful but useless bauble ever worked with greater care than do the craftsmen who make the Starrett Precision Tools which are so essential to modern industry.

It is a job that can't be rushed. Greater efficiency, new methods, additional equipment and the employment of every available trained and experienced toolmaker help a lot, but time is still the essence of accuracy.

If your tool dealer is unable to supply you promptly with the Starrett Tools you need, remember that we who make them must still work carefully and slowly in order that you who use them may work swiftly, surely and confidently.

THE L. S. STARRETT CO. · ATHOL · MASSACHUSETTS · U·S·A·
World's Greatest Toolmakers

STARRETT

PRECISION TOOLS • DIAL INDICATORS • GROUND FLAT STOCK
HACKSAWS • METAL CUTTING BANDSAWS • STEEL TAPES

AUTOMATIC TIMER



New Automatic Timer mounted on Ace Spot Welder with dial readily visible to operator.

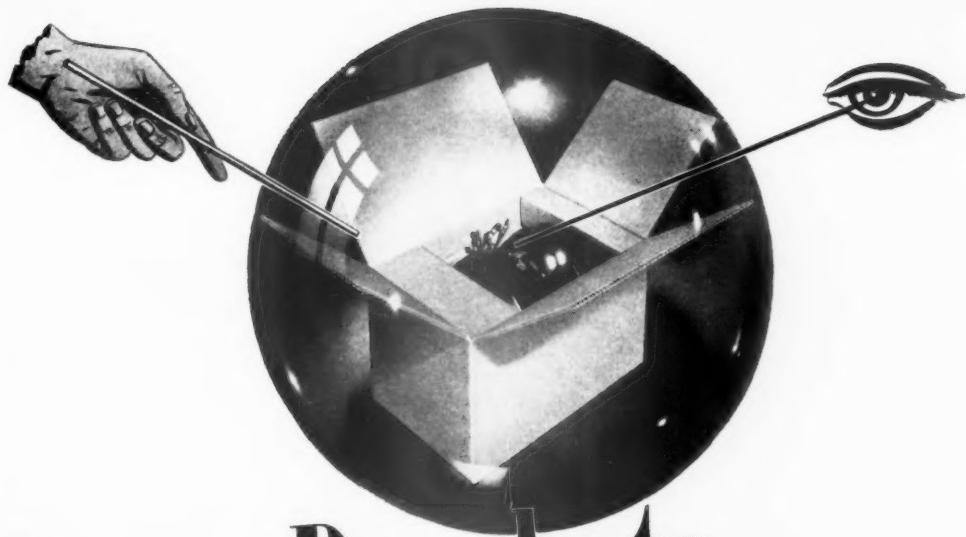
■ Ace Spot Welders made by the Pier Equipment Mfg. Co., Benton Harbor, Mich., are now offered with a new type of precision timer for automatically controlling the welding time period. Thus equipped the element of human error is eliminated. Welding time can be quickly selected, hourly production increased, uniform welds assured. The operator simply feeds the work through the welder.

In the development of this timer, provision has been made for simple easy adjustment, there being three concentric scales on a convenient direct reading dial as shown in the accompanying illustrations. The adjustment range is from 3 to 47 cycles (3/60th to 47/60th of a second), calibrated in one cycle steps. Once the timing dial is set for a particular job, depressing the foot pedal is followed by closing of the welder contactor, energizing the welding circuit and timing element. At the end of the selected time period, the contactor is automatically tripped and the welding circuit opened. Timer is of the electronic or tube type and maximum timing variation is controlled to a plus or minus 1/120th second on short time welding. Having no relays or other moving elements, timing adjustments are accurately maintained.

LUSCO CYLINDER-BOILER WELD

■ A compound which has proven very satisfactory in the repairing of cracked boiler sections as well as for other industrial purposes, has been developed by C. F. Lusk & Co., Cleveland, Ohio. Put up in liquid form it is easy to use as all that is necessary is to add the proper amount to the liquid in the boiler.

Another use is to correct the porous condition which sometimes follows electric welding. By adding this compound to the liquid in the system an airtight and watertight joint is secured. Results are unconditionally guaranteed and the welds thus made are permanent.



Package Prophets

for American business

HINDE & DAUCH Package Engineers . . . "prophets" in their field . . . are mobilized now to train their foresight on your *present* and *future* packaging problems. Trained to *anticipate* the packaging requirements of future markets, these skilled corrugated package technicians have the experience and talent to work ahead intelligently.

Although H & D's 25 mills and factories are on an "all out" schedule, producing shipping boxes for hundreds of items from munitions to motors, H & D Package Engineers can *redesign* your present package *now* . . . make it stronger, more simple, more economical to produce. Likewise, they are prepared to perfect the package you will need *tomorrow*, so that your *entire* merchandising program is ready to march when business returns to business.

What does this service cost you? Nothing. H & D is investing its "prophets" in American business. A few minutes with an H & D Package Engineer *today* may save you months *tomorrow*. Your inquiry will be given immediate attention.



H & D Package Engineers
are practical packaging experts. They can redesign your present package to place still further emphasis upon economical utility.

A few minutes with an H & D Package Engineer today will give you a head start in the competitive merchandising race of *tomorrow*.



HINDE & DAUCH Authority on Packaging

4123 DECATUR STREET, SANDUSKY, OHIO

FACTORIES in Baltimore • Boston • Buffalo • Chicago • Cleveland • Detroit • Gloucester, N. J. • Hoboken
Kansas City, Kans. • Lenoir, N. C. • Montreal • Muncie, Ind. • Richmond, Va. • St. Louis • Sandusky, O. • Toronto.

When writing Hinde & Dauch please mention Purchasing

SAVE
WASTE
PAPER

PERSONALITIES *in the NEWS*

William W. McClevy, Purchasing Agent of the Virginia State Highway Department, has been granted a leave of absence from that position to fill out the unexpired term of Pearne E. Ketron as Director of the State Division of Purchase and Printing. Mr. Ketron has

resigned on account of ill health. A permanent appointment will be made by the incoming governor in January. Mr. McClevy is an engineer by training and experience. He is a graduate of Virginia Military Institute, and was associated with the Atlantic Coast Line Rail-



**Write
for this
Catalog**

● For completely finished Bronze Bearings used in machine tools, industrial equipment and electric motors, and for Tubular and Solid Bars of Bearing

Bronze look to Bunting. Hundreds of sizes available from stock. Ask your wholesaler or The Bunting Brass & Bronze Company, Toledo, Ohio. Warehouses in All Principal Cities.

When writing The Bunting Brass & Bronze Company please mention Purchasing

road and the Standard Oil Company prior to joining the Highway Department as a district engineer in 1917. He became Purchasing Agent in 1938. E. C. Peaco, Assistant Purchasing Agent, is temporarily directing the work of the purchasing office.

Albin S. Nelson has been appointed Purchasing Agent for the Consolidated Aircraft Corp., San Diego, Cal. A native of Sweden, he came to this country at the age of two, worked his way through high school and added University Extension training while engaged on an engineering survey of new roads in Minnesota. He joined the Consolidated organization in 1935, and was Assistant Material Supervisor prior to his recent advancement.

Lewis P. Sanborn has been appointed Purchasing Agent of the Converse Rubber Co., Malden, Mass., succeeded Robert C. Kelley, whose appointment as Purchasing Director of Basic Magnesium, Inc., was reported in the November issue.

John T. Higgins of Cohoes, N. Y., has been named Acting Commissioner of Standards and Purchase for the State of New York, succeeding Joseph V. O'Leary, who has been appointed State Comptroller. Mr. Higgins, a career man in the Civil Service, has been with the Standards and Purchase Division since 1930, and was First Deputy Commissioner prior to his recent advancement.

Harold W. MacIntosh, Purchasing Agent of L. O. Koven Bros., Jersey City, N. J., addressed a recent meeting of the Jersey City Executives' Club on "Priorities."

Frank W. Rowe, General Purchasing Agent of the Johns-Manville Corp., New York City, for nearly a quarter of a century, and for the past several years serving in an advisory capacity, has retired from active business under the company's new retirement plan. Mr. Rowe was among the organizers of the New York Purchasing Agents Association, and served as one of the first Vice Presidents of the National Association.

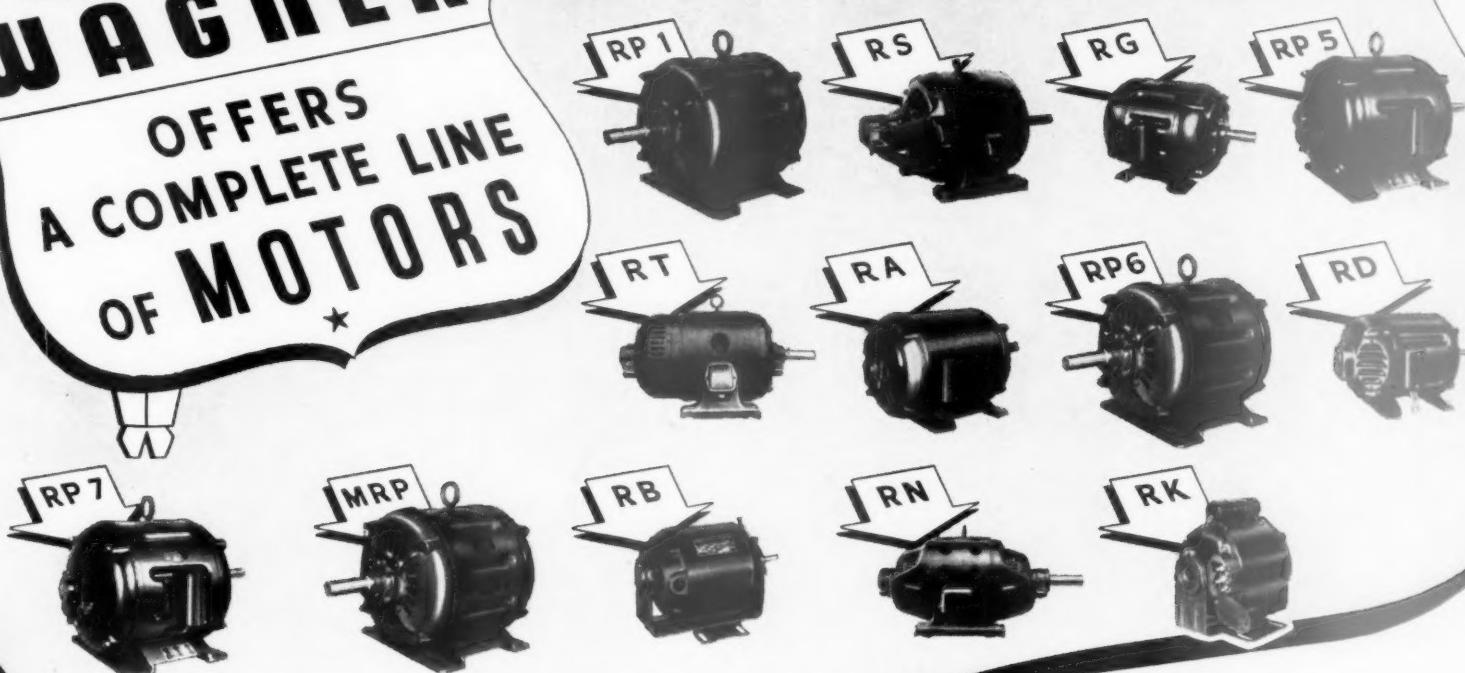
George P. Brockway, Purchasing Manager of the American Optical Co., Southbridge, Mass., has been elected President of the Southbridge Manufacturers and Merchants Association. Mr. Brockway is a past President of the N. A. P. A.

Leo T. Tierney has been appointed Purchasing Agent for the Madison-Kipp Corp., Madison, Wis., succeeding Ray Togstad, who resigned to enter business on his own account.

Stuart F. Heinritz, Editor of PURCHASING, addressed a recent meeting of the Industrial Marketers of New Jersey, at the Essex House, Newark. His topic was, "National Defense is a Marketing Opportunity."

At Your Service!

WAGNER
OFFERS
A COMPLETE LINE
OF MOTORS



WAGNER motors may be broadly divided into three general classes: polyphase, single-phase, and direct-current. The following outline shows the various subdivisions and the Wagner type letters which apply to them.

1. Polyphase

A. Squirrel-Cage Rotor

1. Low resistance Type RP-1
2. High reactance Type RP-5
3. High resistance Type RP-6, RP-7

B. Wound Rotor

1. Low resistance Type RS
2. High resistance Type RT
3. Synchronous Type RN

2. Single-Phase

A. Wound Rotor

1. Repulsion start Type RA
2. Repulsion-induction Type RG

B. Squirrel-Cage Rotor

1. Capacitor-start Type RK
2. Split-Phase-start Type RB

3. Direct-Current

A. Wound Rotor

1. Compound-Wound Type RD

Polyphase Squirrel-Cage Low-Resistance (1/6 to 400-hp)

Because of its simplicity, rugged construction, and low cost the RP-1 motor is the most popular type used in industrial plants. It has sufficient starting-torque for operating machine tools, fans and blowers, centrifugal pumps, some types of compressors, and many other kinds of machinery.

Polyphase Squirrel-Cage High-Reactance (1-1/2 to 125-hp)

Some applications require motors of higher starting-torque than obtainable in RP-1 motors. Typical examples are crushers, plunger pumps, belt conveyors starting under load, large air compressors, large refrigerating machinery, mixers, etc. For such applications Wagner builds a high starting-torque motor with high-reactance rotor, known as type RP-5.

Polyphase Squirrel-Cage High-Resistance (1/2 to 150-hp)

The motors discussed thus far are not suitable for operating machines having heavy flywheels because these motors will not permit the flywheels to deliver enough of their stored energy during the punching or drawing operation. For these applications Wagner builds RP-6 motors with high-resistance rotors. During the working part of the cycle, the motor speed drops considerably and allows the flywheel to do its work. High-resistance rotors are also used in RP-7 (1 to 50-hp) elevator motors, which are used on low-speed elevators, hoists, dumb waiters, etc.

Polyphase Wound-Rotor Low-Resistance (1 to 250-hp)

There are two reasons for the existence and application of motors of the Wagner type RS. First, since the rotor winding is connected to slip-rings making it easy to connect a high external resistance in the rotor circuit, it is possible to obtain extremely low starting-currents without impairing the running performance. Second, by introducing resistance in the rotor circuit of an RS motor it is possible to obtain speeds from 50 to 97% of synchronous speed. This method of speed control is satisfactory when the load is constant. For obtaining different speeds on applications where the load varies, Wagner recommends the use of polyphase squirrel-cage multi-speed motors, type MRP, which may be obtained with two, three, or four speeds.

Polyphase Wound-Rotor High-Resistance (40 to 100-hp)

The air-conditioning industry sometimes requires motors which must have higher starting-torques and lower starting-currents than can be obtained in good squirrel-cage motors. For such applications the Wagner RT motor was developed. The characteristics of unusually high starting-torque and exceptionally low starting-current are accomplished by using a high-resistance secondary winding which is permanently short-circuited.

Polyphase Wound-Rotor Synchronous (7-1/2 to 200-hp)

Wagner Synchronous "Fynn-Weichsel" motors, type RN, differ from conventional synchronous motors in that they have starting characteristics like RS motors,

do not have separate excitors, and have simple starting devices. The RN motor is the ideal motor to install where power factor needs correction because it not only improves the power factor but also handles the toughest job to be found.

Single-Phase Wound-Rotor Repulsion-Start (1/8 to 15-hp)

For single-phase circuits there is no better motor than the Wagner RA repulsion-start induction motor, which starts as a repulsion motor with high starting-torque and low starting-current, and, upon approaching operating speed, is automatically converted into an induction motor. With few exceptions, if single-phase current is involved, the RA motor is the logical choice.

Single-Phase Wound-Rotor Repulsion-Induction (1 to 5-hp)

Filling-station compressors are often operated in cold locations under weather conditions which conceal the oil in the compressor crankcase and may increase the load until it is double its normal value. For such applications Wagner produced the RG motor which is a brush-riding machine with a squirrel-cage to limit the idle speed. This type of motor will carry any load which it can start and is ideal for filling-station compressor applications.

Single-Phase Squirrel-Cage-Rotor Capacitor-Start (1/6 to 1-hp)

In order to meet a competitive situation Wagner builds the RK motor, which is a capacitor-start induction machine.

Single-Phase Squirrel-Cage-Rotor Split-Phase-Start (1/20 to 1/3-hp)

The cheapest type of single-phase motor is the RB split-phase machine. It is recommended for applications where the starting duty is light and the period of acceleration is short. The RB-5 (1/6, 1/4 and 1-1/3-hp) is a special service motor intended for washing machines, mangles, etc., which operate only for a short period of time at infrequent intervals. The RB-5 motor should not be used on jobs which operate continuously.

Direct-Current Wound-Rotor Compound-Wound (1/6 to 3-hp)

Wagner also builds direct-current type RD motors, which are still required in some locations.

**Send for Bulletins MU-177, MU-179,
MU-182 describing WAGNER Motors**

M41-30

50 YEARS OF SERVICE



This year Wagner celebrates its fiftieth year of service to industry and the home—as a manufacturer of motors, transformers, and fans of the highest quality.

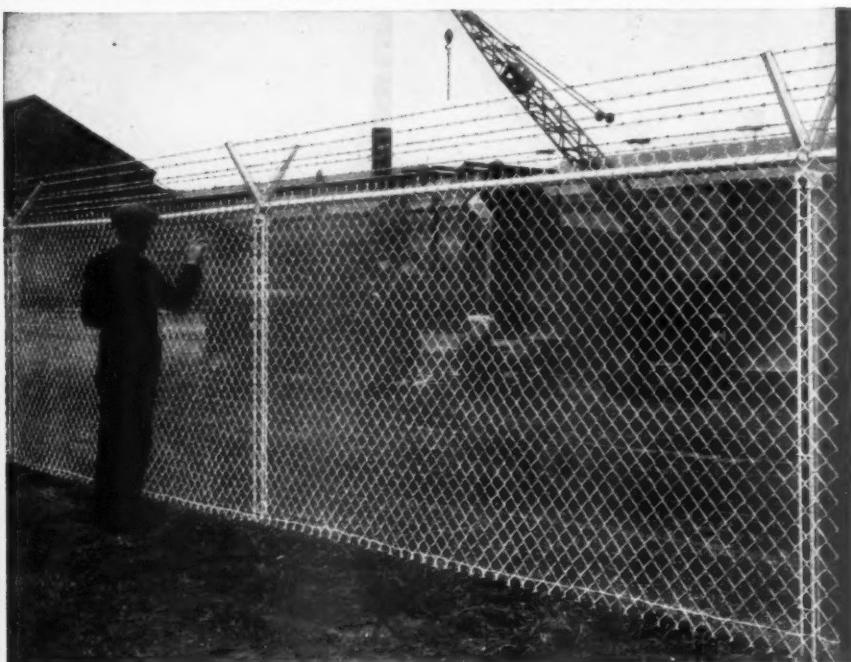
Wagner Electric Corporation

6400 Plymouth Avenue, Saint Louis, Mo., U.S.A.

MOTORS • TRANSFORMERS • FANS • BRAKES

PAGE FENCE

America's First Wire Fence - Since 1883



ITS STRENGTH IS IN ITS SHAPE

★ Pound for pound of weight, Page Winged Channel Posts are strongest and render longest service. Their shape gives them greater resistance to pull and strain. Expertly erected on these extra strong posts, your Page Fence is up to stay. • A better post, specially developed for use with chain link fence, is but one of the Page advantages. Page Fence fabric is woven of copper-bearing steel wire, heavily galvanized after weaving. Only Page provides localized engineering and erecting service. Page Fence is distributed by 102 firms which own and operate their own plants—local business men, technically-trained, long-experienced and permanently interested in every job they handle. • Write for "Fence Facts," to PAGE FENCE ASSOCIATION, Monessen, Pennsylvania, or Bridgeport, Connecticut . . . New York, Pittsburgh, Atlanta, Chicago, San Francisco.



A PRODUCT OF PAGE STEEL & WIRE DIVISION—AMERICAN CHAIN & CABLE COMPANY, INC.

THE WIEMAN AND WARD CO.

Producers and Shippers

COAL COKE PIG IRON

Steam . Gas . By-Product Coal
Furnace . Foundry . Domestic Coke

PROMPT AND EFFICIENT SERVICE

OFFICES: OLIVER BUILDING, PITTSBURGH, PA. ATLANTIC 5325
CINCINNATI OFFICE: CAREW TOWER

George A. Renard, Executive Secretary-Treasurer of the N.A.P.A., who has been a consultant to the OPACS and OPA for the past year, has been appointed Acting Chief of the Printing and Publishing Branch, Division of Civilian Supply, OPA.

Charles E. Smith, Vice President in Charge of Purchases and Stores, New York, New Haven & Hartford Railroad, addressed the annual meeting of the American Railway Bridge and Building Association in Chicago, October 15th, on "The Effect of the Defense Program on the Procurement of Railway Materials."

Paul W. Fenton, formerly Purchasing Agent of the Tide Water Associated Oil Company, New York City, has gone to Washington to work with the Purchase Division of OPM under a civil service appointment. Mr. Fenton is a past president of the Tulsa Association, having served in that capacity while buying for the Tide Water company in Tulsa.

V. L. Wallace, formerly associated with the purchasing department of the Shell Oil Co., has been appointed special representative of the Colona Protector Division, Pittsburgh Screw & Bolt Corp., with offices in Tulsa.

Remington E. Rose, for many years Purchasing Agent of the National Surety Co., New York City, will retire from active business on January 1st.

Charles C. Johnston of Ogden has been appointed Purchasing Agent of the Utah Liquor Control Commission. He succeeds Max D. Christensen, who has been associated with the Commission since it was established in 1935.

Oakley W. Dexter, Purchasing Agent of the Crown Zellerbach Corp., San Francisco, and a former Vice President of the N.A.P.A., has joined the staff of the Purchase Division, OPM, in Washington. He will take over the work of W. E. Bittner, who is returning to his position as Purchasing Agent of the Diamond Alkali Co., Pittsburgh, after several months of government service.

Fred Lord, Purchasing Agent of the Oregon Shipbuilding Corp., Portland, was a speaker at a recent meeting of the Portland Shipping Club, describing his company's part in the national defense program.

Edward J. Garvey has been appointed Assistant Purchasing Agent of the Vick Chemical Co., Greensboro, N. C. Mr. Garvey has been with the Philadelphia office of the company since his graduation from Colgate University in 1939.

Timothy J. Kearns has retired as Assistant Purchasing Agent of the DuPont Company, after fifty years of continuous service. He entered the employ of the Grasselli Chemical Co., Cleveland, in October, 1891, as a laboratory boy, and was at the head of the purchasing de-

Three standout Buys

1

A stronger "Common" nut

By actual test, Bethlehem Hot-Forged Nuts have greater resistance to splitting and stripping than regular "Common" nuts. This is the result of a special process, Hot Forging.

The hole of most "Common" nuts is punched out with a tearing action, while the hole in Bethlehem Hot-Forged Nuts is formed by working the still-plastic metal out from the center toward the side-walls of the die. You can see how this makes a more sinewy steel, how it forms a tougher, more perfectly-shaped nut.



2

A completely uniform pipe

You simply can't get pipe made any more uniform than BethCoWeld—thanks to the remarkable Continuous Weld Process. BethCoWeld pipe comes to you in uniform lengths, 21-ft. plus or minus 1 in. for easier handling and installation. Specify BethCoWeld on your next pipe order and see the difference.

3

A more consistent-performing wire rope

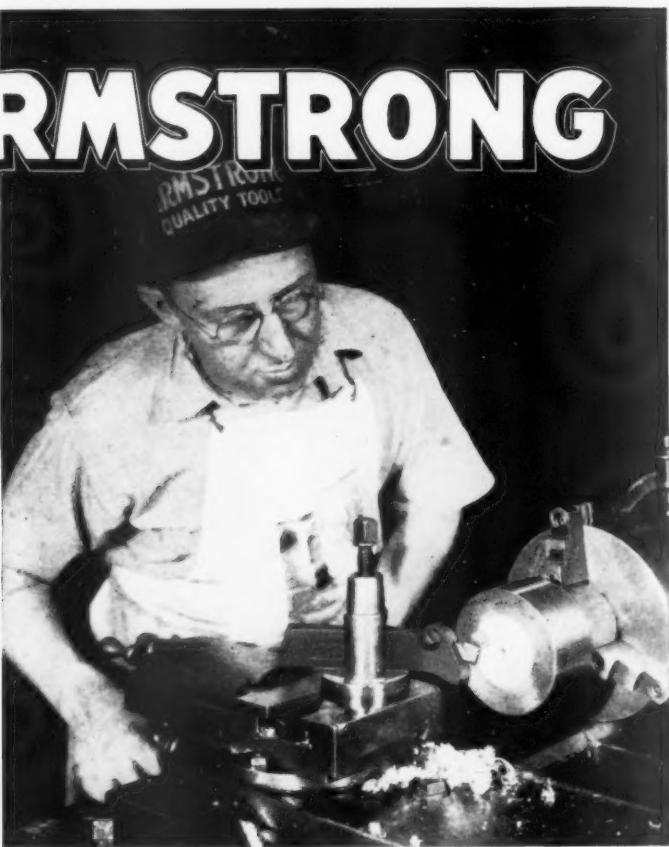
All the way from iron ore to finished product, Bethlehem Wire Rope is made by one closely integrated organization. Every process in its manufacture is watched over by one group of metallurgists and engineers, ensuring production of a wire rope that's more uniform in quality, more consistent in performance. Let one of the 260 Bethlehem distributors fill your wire rope needs for you.



BETHLEHEM STEEL COMPANY

When writing Bethlehem Steel Company please mention Purchasing

ARMSTRONG



More ARMSTRONG TOOL HOLDERS will answer your High Speed Steel problem.

You can, in effect, increase your High Speed Steel allotment tenfold by using ARMSTRONG TOOL HOLDERS for every operation on all lathes, planers, slotters and shapers. Each ounce of High Speed Steel used as a bit in an ARMSTRONG TOOL HOLDER will machine more steel than can 10 ounces of High Speed Steel in a bar tool. By using all of your High Speed Steel in ARMSTRONG TOOL HOLDERS you also cut steel loss from tool grinding (more than 70%), and eliminate high speed steel waste in cumbersome tool stumps. Under the Armstrong System you never have precious High Speed Steel tied-up in single-purpose tools, because each ARMSTRONG TOOL HOLDER is a multi-purpose tool that does the work of a complete set of forged tools.

Use ARMSTRONG TOOL HOLDERS throughout and you not only "Save: All Forging, 70% Grinding and 90% High Speed Steel" but you have a flexibility in tooling that will enable you to start any operation on a moment's notice.

ARMSTRONG BROS. TOOL CO.

"The Tool Holder People"

303 N. FRANCISCO AVE.

CHICAGO, U. S. A.



ARMSTRONG TOOL HOLDERS Are Used in Over 96% of the Machine Shops and Tool Rooms



FLEXIBLE BELT LACING

STEELGRIP is a stronger lacing for all power and conveyor belts. Clinches smoothly into belts, compresses the ends, prevents fraying, 2-piece hinged rocker pins prevent excessive wear. In boxes or long lengths.

Write for catalog.
ARMSTRONG-BRAY & CO., "The Belt Lacing People"
5378 Northwest Highway, Chicago, U.S.A.



BELT HOOKS

WIREGRIp belt hooks have the patented blue aligning card that holds hooks firmly in position, prevents them from loosening, prevents hook loss from handling, prevents waste of short ends. Every WIREGRIp Hook is the last one can be used.

When writing advertisers please mention Purchasing

partment when that company was taken over by the DuPont organization in 1928. He was transferred to the headquarters office in Wilmington in 1936. Forty-four of his associates, each with 25 or more years of service in the company, feted Mr. Kearns on the occasion of his retirement.

O. P. Moss, who for the last eight years has been in charge of purchases at the Jones-Dabney Division of Devoe & Raynolds Co., Louisville, Ky., has been transferred to the company's home office in New York, where he will assist Mr. Prindle in the purchasing of raw materials including solvents, resins, cellulose, and certain white pigments.

AVOID FREIGHT LOSSES

The Baltimore sub-committee of the Atlantic States Shippers Advisory Board, on prevention of freight loss and damage, has some practical suggestions on this problem, which is particularly important in these times of national emergency.

Shipments which are lost or go astray are not only costly to shippers and carriers but disrupt their normal business dealings. The present condition of increased traffic and demands upon carriers for speed creates a greater chance of loss or delay unless every precaution is taken. Shippers and consignees of freight can save themselves time, expense and annoyance by observing the following suggestions:

1. Shippers should mail immediately copy of bill of lading showing carrier's signature to consignee for every shipment. Consignee would then be able to check the correct weight of shipment, the number of pieces, and compare same with the purchase order in case of a back-order shipment. If an error occurs, consignee should immediately notify the carrier, who would check his "overs" list and, no doubt, find the missing package.

2. The Purchasing Department should either have printed or rubber stamped on all purchase orders "Copy of bill of lading must be mailed to us to secure prompt payment of your invoice." This would expedite the work of the Receiving Department.

3. Each package in an L. T. L. or L. C. L. shipment should be properly and legibly marked with a brush, stencil, or tag showing the name of shipper and of consignee, street address, and city or town. Each package should be marked as shown on the bill of lading. When practicable, show the order number for identification. An improperly marked package is directly responsible for the majority of "astray" packages.

4. Erase all previous marks on used containers to avoid shipment going astray.

5. As an aid to the identification and prompt delivery of freight which has become separated from the billing, or which is classed as an "over" without mark or insufficiently marked to enable the carrier to forward same to destination.

LYON

SHOP AND STORAGE EQUIPMENT

SPEEDS

VITAL NATIONAL DEFENSE PRODUCTION



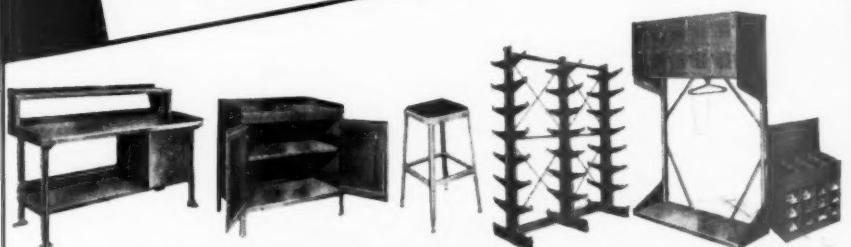
Aircraft: Pictured here is one of the many applications of Lyon equipment that has helped aircraft manufacturers solve urgent and complex storage and material handling problems. Lyon equipment is serving practically every major manufacturer of aircraft and aircraft motors in America.



Shipyards: In 18 leading shipyards Lyon Steel Storage and Shop Equipment is making possible faster handling of tools and materials. Strength, flexibility and space-saving design are major factors in the preference shown for Lyon Products by operators in this field.



Tanks: As manufacturers divert production facilities to vital defense production they have turned to Lyon not only for increased amounts of the Storage and Shop Equipment used successfully for many years, but for engineering cooperation in the layout of stockrooms, toolrooms, etc., for new plants, and in solving new storage and stock handling problems.



NON-ENGINEERED DEFENSE PRODUCTS SOLD BY LYON DISTRIBUTORS



LYON *Service*
SHOP EQUIPMENT



Ordnance: Arsenals and power plants —they are faced with the same common problems of SPEED. In each case, LYON Equipment is helping provide that vital speed... and has been readily adapted to each plant's individual requirement.

- Manufacturers of all types of Defense Products are finding Lyon Shop, Storage and Toolroom Equipment major aids in meeting or bettering "impossible" production schedules. By providing more orderly storage, and accelerating the handling of tools and materials, these industry-proved units permit maximum use of minimum inventory... conserve floor area... make every available die and small tool more productive.

If your defense projects involve sub-contracting of units or parts of units fabricated from heavy and medium gauge sheet metal, investigate the unusual facilities available for such work in our two large, modern plants. Illustrated brochure, "CRAFTSMEN IN NATIONAL DEFENSE" describes these facilities in detail.

LYON METAL PRODUCTS, INCORPORATED

General Offices: 3312 Madison Ave., Aurora, Ill.
Branches and Distributors in All Principal Cities

LYON METAL
PRODUCTS
INCORPORATED

Craftsmen
in
NATIONAL
DEFENSE

There's only

CHAMPION COAL

"It's the Best"

When you add up the coal bills for the year, you'll find that Champion packs the extra value you like to buy. We actually tailor-make it to suit your combustion requirements! Champion is scientifically cleaned—you buy no unburnable refuse. It is accurately sized and thoroughly prepared to give you peak evaporation, higher overall efficiency . . . maximum results per pound of coal! • Prove it to yourself—make your next order read "Champion Coal."



PITTSBURGH COAL CO.
CHAMPION COAL
PITTSBURGH PA.

PITTSBURGH COAL COMPANY

General Offices: Oliver Building., PITTSBURGH, PA.
 Cleveland, Ohio Sault Ste. Marie, Mich. Buffalo, N. Y. Utica, N. Y.
 New York City Philadelphia, Pa. Youngstown, Ohio
 PITTSBURGH COAL CO., LTD., London, Ont.; Hamilton, Ont.; Toronto, Ont.; Windsor, Ont.
 PITTSBURGH COAL COMPANY of Wisconsin, Duluth, Superior, Minneapolis, St. Paul
 MILWAUKEE-WESTERN FUEL COMPANY, Milwaukee, Wisconsin

"Yours on Request" offers you the latest catalogs and manufacturers' announcements, information on new industrial products. Are you using this department? Turn to pages 10-16.

tion, the following instructions should be given all forwarding agents: "Each package, case, or crate should bear an identification stamp, showing the name of the carrier and station." Packages found "over" at any point could then be readily matched with the billing by simply contacting the agent at point of origin shown on the packages.

Because of prevailing priorities, scarcities of materials and the uncertainty of duplicating shipments, it is in the interest of all that complete cooperation exist between carriers, shippers and receivers of freight, to the end that shipments may be delivered without delay. Serve yourself and the national needs by observing these suggestions, which will in a measure contribute to the Government's Defense Program.

111 TWELVE TIPS FOR SALESMEN

John S. M. Hayes, Purchasing Agent and Secretary of Shipping Containers Limited, Montreal, addressed a recent meeting of the Kiwanis Club in that city on salesmanship from the buyer's point of view. He cited twelve reasons why some salesmen don't "click" with the men to whom they try to sell, as follows:

1. The salesman doesn't know his product.
2. He neglects to keep properly informed about his product.
3. He talks too much.
4. He uses the old line that "he was just passing by and thought he'd drop in."
5. He takes it as a personal insult if you don't place an order with him.
6. He assumes that you remember him from the last visit.
7. He calls too often.
8. He vacillates, and may give the impression that has one price for you and another for some one else.
9. He promises deliveries without confirmation from higher-ups.
10. He may try to go over the head of the Purchasing Agent.
11. He talks glibly about "marvellous service," often not knowing the real meaning of the word.
12. He is a traveling department store, and hauls out one article after another for your disapproval.

111 AUTOMATIC PRESS FACILITATES SERVICE

In order to facilitate service to dealers, distributors and customers the Old Town Ribbon & Carbon Co., Brooklyn, New York, has added a high speed automatic press to the battery operating in its printing department. The press efficiently produces as high as 3,000 impressions per hour.

THE PURE OIL COMPANY

CHICAGO, U.S.A.

A COMPLETE LINE OF INDUSTRIAL PETROLEUM PRODUCTS
 A Pure Oil engineer will help solve your lubrication problems. Write today.



Be sure with Pure



"Change the specification? Who in the ??x: ever heard . . . s-a-y . . . wait a minute. Why didn't you say that before? Lemme see . . ."

This is one time the lunch is on him. Boy, is he happy! Says the switch saved him six weeks' delay in getting started . . . cut production time in the bargain, too. Happy day!

Before I could get the idea across, he popped off again: "Substitute? Substitute what? Can't you read a spec . . ."

Not even a high priority rating can guarantee quick steel deliveries these days. Ever think of divorcing those "specs" you're married to?

A slight change—to a more available grade—may save you weeks of delay. Scores of steel users have licked delivery problems with the advice of Frasse Technical Service—as case histories in our files will testify.

Frasse Technical Service costs you nothing. It may save you headaches and delays aplenty. Why not talk it over? Address or call: Peter A. Frasse & Co., Inc., 17 Grand Street, N.Y.C. (Walker 5-2200) 3921 Wissahickon Avenue, Philadelphia (Radcliff 7100, Park 5541) • 50 Exchange Street, Buffalo (Washington 2000) • Jersey City, Hartford, Baltimore, Rochester, Syracuse.

FRASSE TECHNICAL SERVICE

FOR QUALIFIED ASSISTANCE IN PROCURING
AND FABRICATING MECHANICAL STEELS

FRASSE MECHANICAL STEELS

SEAMLESS STEEL TUBING • SAE ALLOY STEELS • STAINLESS STEELS • COLD FINISHED BARS • WELDED STEEL TUBING DRILL ROD • C.R. STRIP AND SHEETS

When writing Peter A. Frasse & Co., Inc. please mention Purchasing

EYE ACCIDENTS



That's When We Started Wearing Goggles

Every company that has taken advantage of the protection and correction offered by B&L Goggles has found that, when eye accidents decrease, production increases. This is why:

A serious eye injury can mean the loss of a man whose skill would require years of experience to replace. A minor accident can interrupt a production line for hours. Eyesight defects in only a few key men will slow down production and impair quality in an entire department.

Bausch & Lomb hardened lenses and ruggedly built frames will protect your workers' eyes. Bausch & Lomb prescription ground, hardened

lenses will improve the vision of your men who have defective eyesight.

Bausch & Lomb Safety Goggles, therefore, decrease eye accidents, improve vision, increase production and quality, and lower production costs. Bausch & Lomb Optical Co., 741 St. Paul Street, Rochester, N. Y.

BAUSCH & LOMB
Safety Goggles

Business MACHINES and Stationery STORES

DICTATING MACHINES SAVE TIME

DICTATING machines affect two phases of purchasing; the one in which the buyer selects the dictating equipment after someone else has decided that it is needed, and the one in which the buyer has to find or originate the solution of a problem.

The problems which may be mitigated or solved by dictating machines, go far beyond the realm of routine correspondence. They include getting more use out of the same floor space, and saving the time of skilled personnel.

One of the pressing problems is to get more out of skilled personnel, including top executive personnel. When machines for office and factory cannot be had as quickly as needed, or when bottle necks and jams occur, then skilled personnel must take up the slack or work must get behind schedule.

Dictating machines are means for saving the time and speeding the output of skilled personnel. They can do these

Callers can dictate their messages to busy buyers, saving time for both.



By E. L. CADY

Photographs by courtesy of Dictaphone Corp., Thomas A. Edison, Inc., and Sound Scriber Corp.



Recording unit of one of the disc-type dictating machines.

things in every department, and for every man who handles papers. This has been worked out and proven on so many kinds of work and under so many circumstances that it often is worth while to buy dictating machines just to get the surveys and studies of correspondence, paper work and office procedures which will be supplied by the men who sell them.

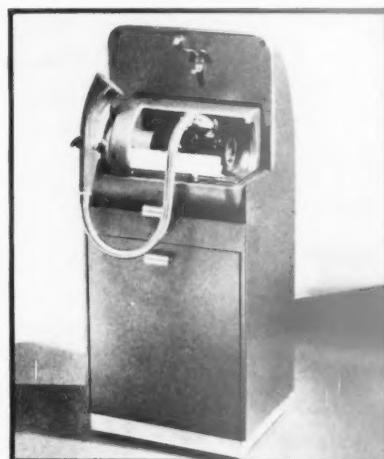
More and more often, in conference, the buyer will say: "a dictating machine will help with that problem."

There are two general types of dictating machines: those which use cylindrical records, and those which use disc records. The cylindrical record machines have been on the market much longer, are more familiar to office per-

sonnel, and undoubtedly their makers have more data on office procedures and a greater number of trained men to make studies of office methods and to give advice regarding them. The disc types may offer advantages for some kinds of work, especially if records with dictation on them are to be mailed, filed, or handled often.

With floor space at a premium in so many companies—forces are working overtime because there is not room enough for extra personnel, and some national defense plants have put on office night shifts—savings of floor space made by dictating machines are important. Floor stand models need only about one square foot of floor space, and desk models need only about the desk top room which would be taken by a letter head. This can mean more desks on the same floor space than as if room had to be provided for stenographers to sit and

The standard floor model is a good looking and efficient piece of office equipment.



take notes. But the greatest savings of space are in the transcribing rooms, since typists spend from 40% to 100% more of time transcribing, and fewer of them with less floor space are needed to get out the same volume of work.

Space also can be saved on production floors, shipping floors, and wherever isolated offices must be located. By using a dictating machine the marooned executive can work in very small space, can avoid the disturbance of having a girl come into the shop to take dictation, and return the transcribed forms and of leaving it to dictate his reports and correspondence. All that is needed is a messenger boy to pick up the records

and returned the transcribed forms and letters for review and signature.

Dictating machines help executives who want to do part of their work away from the office. Desk models are readily portable, they can be taken home overnight. Records are easy to carry. Machines and records may be found on trains, planes and in hotels, ready for use, and the records can be mailed to the home office for transcribing. Some men have machines installed in their autos so they can record thoughts and ideas or even originate letters and speeches as they drive along. One man has a machine on his bicycle. Such conveniences save the time of executives by making

more of it useful and by voiding the need to take notes which later must be remembered and recorded.

Office managers' time can be conserved if executives use dictating machines. It is possible to use painted color codes on the ends of cylindrical records or in the middles of disc ones, to indicate the source of dictation, the types or qualities of letterheads, forms, etc., to be used, and the degree of haste for transcribing. Often work dictated on one day need not be transcribed before the next, and by having such records on hand the office manager can smoothen the flow of work to his typists. In any case the visible codes let the manager see more of what is going on, and cut off mistakes before they get very far.

In some cases, time and floor space are saved by letting a big executive have two dictating machines. One of these is used for his correspondence only. The other is for random notes, the recording of telephone conversations, the book he is writing, the speech he is concocting, and so on. In this way his secretary gets his correspondence and his "hurry up" stuff all together, or mostly all together, while his "can wait" material is in another batch.

Records can be filed, with or without transcribing them. This is especially easy with the flat, thin disc ones, on which file data may be pencilled directly across the sound tracks without lessening the ability to play and hear the records.

Salesmen, trouble shooters and others in the field, like to dictate reports and then mail the original records for transcribing. This custom would once have been considered a luxury, but now it pays its way by getting faster reports and more complete ones. A trouble shooter may carry a portable machine and dictate as he does his work, thus giving the Purchasing Agent a far more complete idea of what materials to buy to avoid future troubles than as if the trouble shooter were to wait until the job is completed and then write or dictate from memory. Trouble shooters and other mechanics are most articulate when they are working.

Duplicate recordings may be mailed to branch offices, men in the field, etc. Again, the net effect is more speed in getting work done. For not only is transcribing time saved, but also the hearers get the voice inflections of the dictators with meanings emphasized more heavily than mere underlinings on a typed page can do.

Phone conversations can be recorded for transcribing or for filing on the original records. There are two ways to do this. One is by the dictator holding the mouth piece of the dictating machine beside that of the telephone so his own words will be recorded, then repeating everything the other party says. The other way is by using a microphone attachment which puts both voices with all of their inflections on the record.

With so much of modern business carried on by phone and in the conference room, that matter of voice inflections can



SLOWDOWN



Machines standing idle while typists struggle. Skilled workers ruffled into errors. The rhythm of office efficiency brown off-stride.

Curl carbon paper seems a very minor thing. Yet the cumulative effect of lost time, temper and tempo results in visible, measurable, costly SLOWDOWN.

It pays to give your typists DAWN

OLD TOWN'S AMAZING NEW CURLPROOF CARBON

AWN costs no more than ordinary carbon. Makes sharp, brilliant, permanent copies. Actually costs less per job because it saves time and temper. Your staff will welcome this easy-to-handle, speedy carbon. For samples write to OLD TOWN, foremost makers of inked ribbons and carbons for every use. Address Dept. 12-P.



Every sheet of OLD TOWN carbon trade-marked and GRADE-marked. Know what you buy . . . get what you pay for.

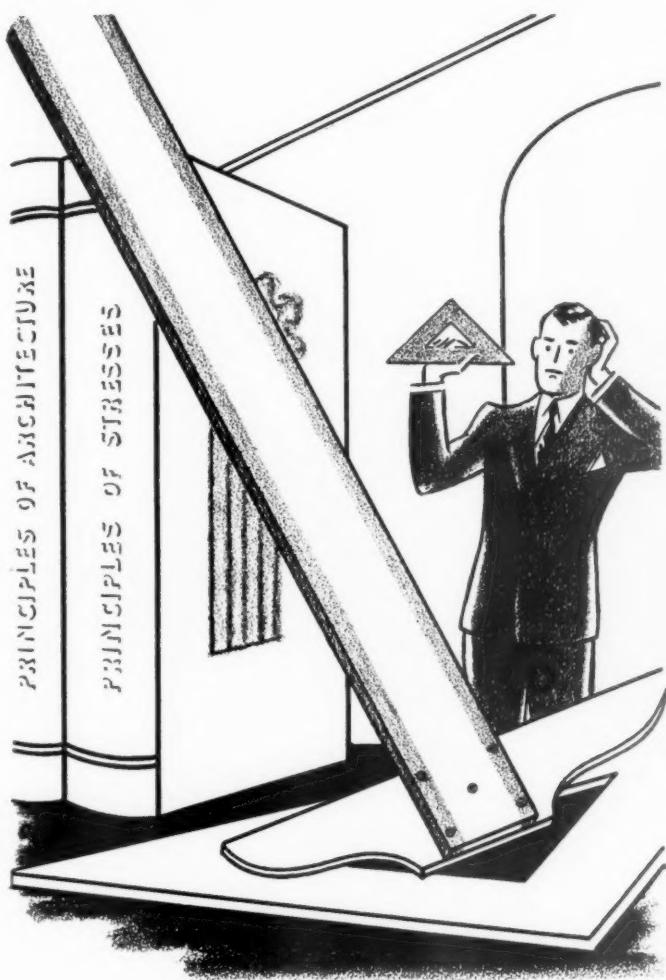


AT YOUR SERVICE
EVERYWHERE

OLD TOWN Ribbons & Carbons
"MAKE A GOOD IMPRESSION"

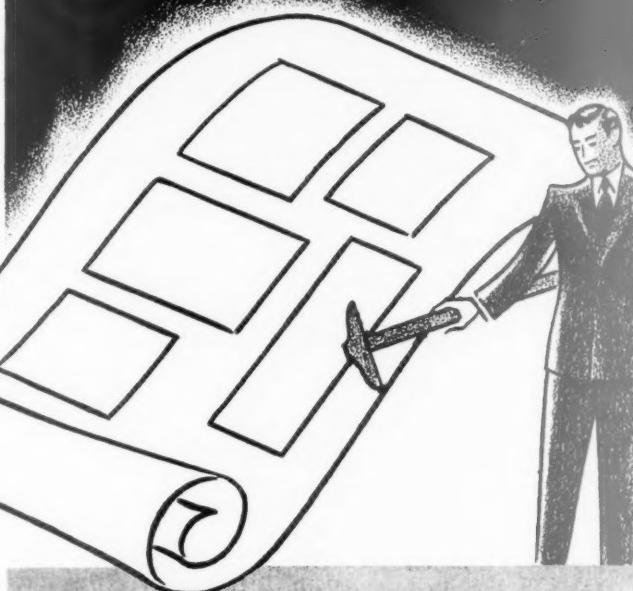
50 Pacific Street, Brooklyn, N.Y. 59 East Van Buren Street, Chicago 788 Mission Street, San Francisco

IT PAYS TO PLAN WITH YOUR PRINTER



Let your printer "architect" your business stationery. He will develop a plan to make your letterheads, envelopes, invoices and statements more attractive and effective. His plan may save you money by combining various runs. You will get more for your printing dollar by following his "blue print." Key to his plan will be the NEKOOSA BOND manual, "It pays to Plan With Your Printer," a volume you will find most interesting. He will recommend NEKOOSA Pre-Tested BOND because he knows this paper and what it will do in your office and in his pressroom. It has plus strength and opacity and attractive appearance. Its surface takes typing and pen and ink perfectly, permits smudgeless erasures. Made in white and ten sparkling colors. Your printer will show you samples when he develops your plan. Call him today.

YOUR PRINTER
can't plan a building
 but
he'll do a great job
of planning your
business stationery



NEKOOSA PRE- TESTED BOND

is one of the Pre-Tested Business Papers made by the NEKOOSA-EDWARDS PAPER COMPANY, Port Edwards, Wisconsin . Others are JOHN EDWARDS BOND - NEKOOSA MIMEO BOND - NEKOOSA DUPLICATOR BOND and NEKOOSA LEDGER



When writing Nekoosa-Edwards Paper Company please mention Purchasing

*Unload Your Problems
on the Old Dutch Salesman!*



CARBON PAPERS INKED RIBBONS

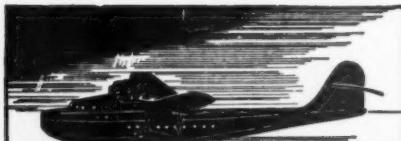
"The Line of Lowest Ultimate Cost"

Each office, accounting, and recording machine offers a different Carbon Paper and Inked Ribbon problem. Our forty years of experience in the production of quality products will enable us to help you get best results from all machines. Our trained field representatives are always at your service; please call them for machine requirement consultations. No obligation, of course!

WATERS & WATERS BRANCH

- ST. LOUIS, MISSOURI, 353 Pierce Building
- SAN FRANCISCO, CALIF., 779 Mission Street

BURLINGTON, NEW JERSEY



THIN PAPERS

Reduce

TYPING, MAILING
and FILING COSTS

Specify one of

ESLEECK THIN PAPERS

Ideal for Air Mail, Branch
Office and Foreign
correspondence.

ESLEECK MANUFACTURING COMPANY
TURNERS FALLS, MASSACHUSETTS



LOSE LEAF EQUIPMENT

*for Every
Business Need!*

For the latest in business forms, consult the Cesco Catalog. It illustrates an extensive range of Loose Leaf Records, all styles and types of equipment for Pen and Machine Poster records, Binders for current and transfer work, Visible Record Systems, Catalog, Advertising Covers, etc. Ask for Catalog No. 32 —on your business stationery.

The C.E. SHEPPARD CO.,
44-03 21st Street, LONG ISLAND CITY, N.Y.

be highly important. Everyone is familiar with the way in which voice inflections can imply punctuations or emphases which may not appear in written transcriptions—high school children play games which are based on this. There is little time now-a-days to argue about who meant what by what statement; the preserving of the original inflection can settle the point. And the question of what was meant, can hold up important decisions until clarified.

Special conference room dictating machines have microphone attachments which will pick up voices from any corner of a room, and have automatic re-loading mechanisms which keep them going steadily for longer time periods than ordinary conferences last.

Microphone attachments are useful when taking inventory, or when someone wants to dictate while going through the files, or when for any reason the dictator wants to talk from a point distant from the machine. An engineer can walk around a machine tool or a "mock up", or keep his eyes on a huge blueprint, and feed his dictation into a microphone. His hands are free. Some disc model machines have as standard equipment microphones which will pick up dictation from several feet away.

Forms and forms-work can be simplified by using dictating machines. One of the purposes of forms is to simplify dictation, but when dictation itself is simplified it is often possible to combine or eliminate printed forms, thus cutting down the procurement problems of printing.

Figures, data and notes can be dictated for transcribing on to forms; the typist can always "listen back" if she is in doubt, and check back after the typing is completed. This often saves the bother of making a rough copy before typing the final form, as well as cutting down the making of penciled notes for the guidance of the typist.

By the use of dictating machines, several men can dictate parts of the data to be put on one form, and can send it to one typist for transcribing at one time. Each man can dictate his part on a record from his supply, so the typist transcribes several records. Or one record can be routed from man to man so each listens to what the others have said before dictating his part. In these days of priorities, close inventory control and high speed buying, such cooperative work by other executives can be helpful to the Purchasing Agent.

Interviews, as well as inter office and outside telephone conversations, can be put "on the record" in the absence of the interviewer. In this scheme the caller dictates his message and the busy Purchasing Agent or other executive listens whenever he gets a free moment. In many companies all such messages must be transcribed and acknowledged, but they save time for both parties.

Discussions regarding complaints, market research interviews, and other customer contact conversations are recorded directly; they cannot later be built-up nor toned down in making reports. Foreign buyers or sellers can dictate their

To Help Plan the Printing You Need Now to Answer Today's Problems...

**SEND FOR YOUR COPIES OF
THE FREE BULLETINS BELOW**



101H—IDEAS FOR MORE EFFECTIVE STATIONERY. A folder to help you match your letterheads, envelopes, invoices and statements with one design, using commonly available type faces, rules and ornaments.

107H—SPEED THE JOB WITH COLOR. Booklet explains the "Signal System" to identify departments, branches, or projects by paper colors. Tells how color saves time, prevents errors, organizes detail, provides a check on mailings.



126H—HOW TO DESIGN A BUSINESS FORM. Booklet that helps test forms, uncover needed improvements and modernize printed forms. Shows the way

to organize a smooth-functioning system of printed forms to simplify the handling of detail jobs.

127H—FORM LAYOUT AND ORDERING SIMPLIFIED. Sheet for use as a guide when ordering forms, carries space for complete printing specifications. Inside fold is ruled for accurate and quick layout of form. Specify whether you use pica or elite typewriter spacing.

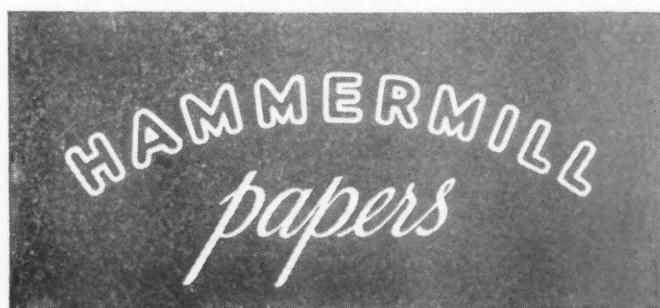


128H—FORM IMPROVEMENT AND REORDER RECORD. Indexed folder-envelope shows when to reorder forms, what changes to make. Acts as a perpetual inventory of form activity.

135H—COMPLETE CHECK-UP FOR YOUR FORMS. Form design "Quiz" sheet lists 25 details for checking forms for completeness . . . an easy-to-use help to make sure no important details are omitted.

137H—REDUCE ERRORS, SAVE MONEY WITH THIS COMPLETE PLAN FOR HANDLING PRINTING ORDERS. To those who buy 25 or more printing jobs a year this plan for printing production control organizes ordering routine into a smooth-working procedure that produces better printed pieces in less time, with less worry over detail, and with less actual work.

175H—21 WAYS TO KEEP A CLEAR DESK. Booklet shows how to avoid "junk-heap desks" by recording important facts in writing. Illustrating time-saving forms for general managers, sales managers, purchasing agents, treasurers, office managers, printing buyers.



*Send
for it!*

Hammermill Paper Company, Erie, Pa
Please send me FREE the printing helps I have checked below:

101H 126H 128H 137H
 107H 127H 135H 175H

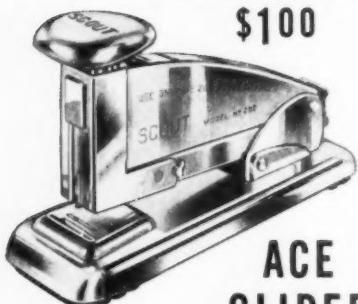
Name

Position

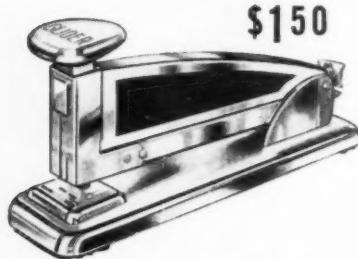
(Attach to or write on your business letterhead) P.D.E.



ACE SCOUT
\$100



**ACE
GLIDER**
\$150



**AVOID LOST,
MISPLACED PAPERS!**

Every employee should use an ACE STAPLER . . . the fast, efficient way to fasten papers together. They never jam or clog; are built with watch-like precision engineering by skilled workmen from highest grade materials. They staple, tack, and pin. *Guaranteed for a Lifetime!*

OFFICE MANAGERS: For increased efficiency equip each desk with an Ace Stapler and Ace Staples today.

HANDY STAPLE REMOVER

You can't afford to be without this remarkable, patented device. Removes clinched staples instantly. No injury to paper. 60c.



WRITE FOR NEW FOLDER ON COMPLETE ACE LINE

ACE FASTENER CORPORATION
3415 North Ashland Ave., Chicago, Ill.



messages to be transcribed whenever a transcriber becomes available. Groups of buyers can dictate individual impressions after trips through the factory.

When an assistant to an engineer or other technical man is being hired, a master record with all of the words and expressions which the technical man wants to use, can be dictated. Candidates then listen to this and follow its instructions, thus taking their tests while the technical man goes about his work, with personal interviews reserved for the most fit.

Voice recordings can be made and filed by the personnel department; they save calling back secretarial or telephone board candidates for secondary interviews.

Medical Department Supervisors take and file the voice recordings of the stories of accidents, made when the victims and witnesses first come in; these may have important effects upon legal costs. Diagnoses, too, are recorded as the Physician goes along with his examination.

Executive notes by everybody from the Purchasing Agent to the Field Engineer, often are dictated in the presence of the assistant who is to transcribe them. The assistant makes mental or written notes as the dictation goes along, then the final transcript is a combination of what both men have thought and observed. This is a rapid way to break-in, train and develop an assistant, and it can reduce the amount of actual dictating which the executive has to do.

When several shifts are at work in offices or factories, it is quite common for executive hours to overlap so the bosses of one shift can report to those of the succeeding one. This kind of overtime, plus its problem child the phoning to the home of a man who is supposed to be off duty, can be reduced by the use of dictated records which are played back by the executives of later shifts.

Executives of one shift, can dictate material which is to be transcribed by stenographers on another. This may gain as much as twenty-four hours in the delivery of a letter, or it may give the night man the same chance the day man has to get his ideas and requisitions before the Purchasing Agent.

Dictating machines have all sorts of odd uses. Football coaches use them on the sidelines during practices and games. But production men also use them to record "on the spot and at the minute" impressions regarding the failures of tools, the outages of machines, the performances of raw materials, and other matters of great interest to Buyers.

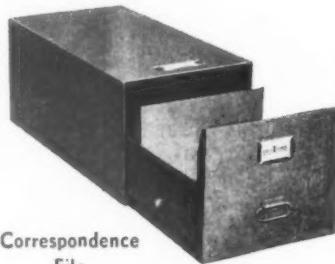
Perhaps the greatest advantage of dictating machines is that they are instantly ready for ten seconds or ten hours of work. And quite often, modern executives get through their days only by saving time in units of a few minutes or a few seconds.

The dictating machines can make these savings because they are made and sold by companies and men who know how to apply them. It is possible for the savings made by the machines to be heavy

SAFE T STAK
STEEL RECORD FILES

MORE THAN 2,300
VARIOUS SIZES
AND LENGTHS ARE
AVAILABLE TO
MEET YOUR
REQUIREMENTS
FOR HOUSING YOUR
**DEFENSE
RECORDS**

Write for Details TODAY



The Steel Storage File Company
Wooster, Ohio
Originators of Steel Storage Files

SEAL AND SAVE

Evans'
No. 1303

**CASE
SEALING
GLUE**

All these advantages accrue to users of EVANS No. 1303 case sealing glue: proved economy; more rigid cartons; greater holding strength; maximum safety in application and receiving; reducible with water by 50% or more. A brush and bucket are all the equipment needed. Prices gladly given!

THE COMMERCIAL PASTE CO.
508 Buttles Ave., Columbus, Ohio



Chart the Course of
**AMERICAN
BUSINESS**

Byron Weston Company specializes in high grade cotton fibre content papers designed for the myriad record keeping and correspondence needs of modern industry and commerce. The complete Weston line includes papers for permanent records; for accounting, office and factory forms; for machine bookkeeping and card record systems and for letterheads and documents. When you buy paper for these important uses, remember to specify a Weston paper. Your printer, stationer or paper merchant can supply the right Weston paper for any purpose.

BYRON WESTON COMPANY
Dalton, Massachusetts



*If it's a
WESTON paper.
it's a
better paper!*

but outweighed by those resulting from the consulting services which go with them. In quite a few cases there is so little to choose between mechanical features of machines that the buying decision is guided by the suggestion-making ability of a salesman. For those suggestions point to the best savings which dictating machines make—the savings which conserve the time of executives, skilled personnel and of other machines, and which lead Purchasing Agents to say about knotty situations: "A dictating machine would help us."

**GIANT DEVELOPER SPEEDS
PRODUCTION OF DEFENSE PLANS**

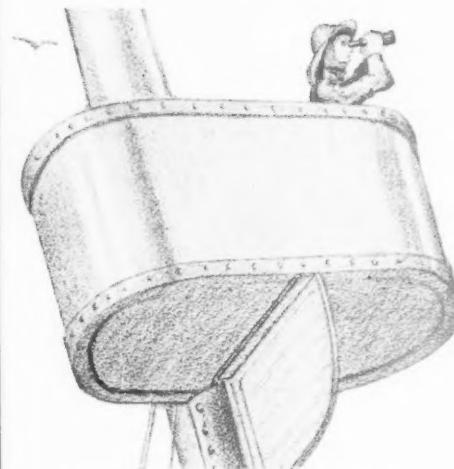
Pressed into 24-hour-a-day service to speed production of defense orders, the largest developing machine of its type in American industry is turning out 18,000 drawings daily at the East Pittsburgh works of Westinghouse Electric and Manufacturing Company. These drawings or prints for the production of electrical equipment are produced by an original method called "Black and White (B.W.) Direct Printing Process." The 80-inch machine brings out the drawings in black lines upon white paper, developing more than 10 miles of 36-inch wide paper per month.

Recently the United States Navy shipped destroyer equipment tracings to East Pittsburgh with rush orders for 553 prints, each ranging from 13 feet to 25 feet in length. The completed prints weighed 200 pounds and were turned out by seven men with the assistance of their mass production machinery. Such a task, which a few years ago would have overwhelmed the production division's facilities, now can be prepared for shipment within 24 hours without slackening the regular flow of work.

Because of its speed, this direct process promises to replace the traditional blueprint method for most jobs, in the opinion of J. J. Deller, Westinghouse engineer who was instrumental in the machine's development. This process requires 50 seconds to expose and develop a print, compared to three minutes by continuous blueprint machines. The large machine uses two gallons of water a day instead of 3,600 gallons required formerly, and the new method needs less floor space, less power, and costs less to operate.

In direct process, a chemically coated paper is run through the printing machines. Within the printing machine is a powerful carbon arc lamp which shines through the transparent drawing or "tracing" onto the coated paper. Where the light strikes the paper, the coating is dissolved, but where the lines of the tracing cast their shadows the chemical remains. This exposed paper is then fed into the developer, which applies a film of developing solution to the exposed side and a small quantity of water to the unexposed side to prevent curling. The chemical coating remaining on the paper reacts with the developing solution to produce a black color and thus the lines of the drawing appear in black.

Above Pinnacle All...



SHARP LOOKOUT

KEEP A SHARP LOOKOUT for rapid business changes. Assure yourself of the high quality and unchanging performance of the materials necessary for the conduct of your business.

PINNACLE—Above all in ribbons and carbons—is particularly appreciated in times such as these, by users everywhere, for its steadfast dependability and uniformity, for its consistent high quality, low cost performance under the speed and pressure dictated by the rapidly mounting volume of correspondence and records of defense industries.

LOOK TO PINNACLE as the answer to your ribbon and carbon needs. Look to Columbia for real service in solving any special ribbon and carbon requirements dictated by the nature of your business. Write or call the Columbia office nearest you, or your local stationer.



COLUMBIA

RIBBON & CARBON MANUFACTURING CO., INC.

*Main Office and Factory:
GLEN COVE, L. I. • NEW YORK*

Branches

58-64 West 40th Street, New York City
204 Dwight Building, Kansas City, Mo.
327 South LaSalle Street, Chicago, Ill.
155 West Congress Street, Detroit, Mich.
227 East Michigan Street, Milwaukee, Wis.
200 Plymouth Building, Minneapolis, Minn.
107 Union Street, Nashville, Tenn.
1020 Pennsylvania Bldg., Philadelphia, Penna.
208 Standard Life Building, Pittsburgh, Penna.
205 East 6th Street, Cincinnati, Ohio
(Harris-Moers Company)

—Also—

London
England

Sydney
Australia

LIGHT WEIGHT INDEX CARD

A DEVELOPMENT which offers many advantages in office administration and record filing, and which has gained rapidly in favor in recent years, is the use of "59 lb." light weight index cards in place of the 72 lb. card which was formerly accepted as standard for most office uses. The light weight bristol is produced in size 20½ x 24¾—58½ lb., cutting economically to the standard 3 x 5, 4 x 6, and 5 x 8 inch card sizes.

First introduced about a dozen years ago in white only, it is now available in a wide range of colors and grades adaptable to practically all system uses as the advantages were recognized and earlier prejudices overcome.

Outstanding feature of the light weight cards is their ability to conserve filing space and to increase the usefulness of filing equipment. A thousand of the cards occupy only seven inches of linear filing space as compared to nine inches for the 72 lb. card—a factor that assumes significant proportions when applied to any extensive filing operation.

For example a battery of ten filing cabinets for 4 x 6 cards, standing nine high and with two compartments in each drawer, and with outside dimensions of 51 x 30 x 15 inches for each cabinet, has a capacity of 550,000 of the 72 lb. cards. These files would occupy a floor space of approximately 32 sq. ft.

In comparison, only eight of these files,

occupying a floor area of 25 square feet, would have a capacity of 572,000 of the 59 lb. cards. An increase of 4% in capacity would thus be attained, and at the same time there would be a saving of 20% in equipment required and in floor space used. In these days when steel equipment is more difficult to obtain, and when floor space and file capacity is at a premium because of heavier operating schedules, these are very important factors. It should be remembered, too, that the investment in equipment and the rental cost of space are continuing items, going on year after year and representing a cumulative expenditure.

Putting it another way, the battery of ten filing cabinets which may already be in use, would have a capacity of 715,000 of the light weight cards—an increased usefulness of 30% with no additional investment. The possibilities of greater flexibility and expansion under this arrangement are obvious.

In addition to the space angle, the light weight cards have other proved advantages. They are as easy and rapid to handle as the 72 lb. cards, and stand upright in the file without sagging or curling. They are suitable for all ordinary duplicating and entry processes, and can be handled in a typewriter much better than the heavier cards since they hug the cylinder like an ordinary ledger sheet or a heavy bond paper. This is of special importance when carbon copies are required.

OLD TOWN RIBBON & CARBON CO. EXPANDS PROMOTIONAL PROGRAM

Old Town Ribbon & Carbon Company, Inc., Brooklyn, N. Y., announces the organization of a complete advertising and sales promotion department and the appointment of Richard L. Frey as Advertising and Sales Promotion Manager.

The phenomenal growth of Old Town in the carbon paper and ribbon field has been largely based on the merit of its products, and a recognition of the importance of constant alertness and research in developing new products and improving performance of old ones. For example, Old Town chemists some years ago discovered a method of eliminating carbon paper's tendency to curl—a tendency which was costly both in operators' time and in shortening the use to be expected from the carbon paper itself.

Applying this discovery to practical production took months of experiment and costly redesigning of machinery—but it resulted in a carbon paper guaranteed against curling. The actual importance of this non-curling feature in economy of operators' time as well as eventual economy in carbon paper costs, is obvious to purchasing agents and efficiency experts.

During 1941 Old Town launched its first national advertising campaign and the increased scope of this campaign planned for next year made the establishment of the new advertising and sales promotion department within the company itself a logical step.

RELY UPON

Ask the first KOH-I-NOOR user you meet, and then ask a hundred more, and you will get the same unfailing answer, "KOH-I-NOOR can be relied upon to give you definite protection from all lead pencil troubles."

Throughout the fifty-odd years the KOH-I-NOOR pencil has been on the market, we have, through constant research, painstaking effort and strict adherence to material specifications, supplied critical users with a drawing instrument of superlative quality.

Rely upon KOH-I-NOOR

1700 TECHNICRAYON PENCILS with small diameter lead, slightly soluble in water, are manufactured in 30 colors.

SEND FOR FREE BOOKLET NO. 11

KOH-I-NOOR
PENCIL COMPANY INC.
373 FOURTH AVENUE • NEW YORK



Shop Bulletin No. 1 gives hints on handling valves and fittings; No. 2 shows pointers on piping placement. Ask your Crane Representative to explain how you can get valuable aid from this practical service.

Ready for you... CRANE SHOP BULLETIN NO. 3

It's ready—to help you keep pipe lines in peak condition for peak production—to help you get maximum service from present equipment. This timely Crane Shop Bulletin Service is designed to aid you in training new maintenance men; and to caution experienced workers on

piping fundamentals often overlooked with costly results. Bulletin No. 3 gives many valuable hints on the proper selection and usage of valves. Copies for distribution to your piping crews may be had from your Crane Representative—or by writing to us.

CRANE

NATION-WIDE SERVICE THROUGH BRANCHES AND WHOLESALERS IN ALL MARKETS

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO
VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

When writing Crane Co. please mention Purchasing

Among the ASSOCIATIONS

UTILITY GROUP MEETS IN DETROIT

The 1941 annual meeting of the Public Utility Buyers Group, N.A.P.A., was held at the Hotel Statler in Detroit, November 24th and 25th. The program for the two-day session was as follows:

Monday Morning Session

Address, "Procurement Difficulties," by F. Albert Hayes of Boston, President of the National Association of Purchasing Agents.

Address, "The Utilities Place in the Defense Program," by J. A. Krug, Chief of the Power Branch, Materials Division, OPM.

Luncheon Meeting

Address, "The Defense Program," by Dexter S. Kimball, Chief of the Machine Tool Section, OPM.

Address, "P-46 Interpretations," by Walker L. Cisler, Consultant, Power Branch, Materials Division, OPM. Discussion.

Theater Party

A cocktail hour and dinner in the Wayne Room preceded the theater party—"My Sister Eileen," at the Cass Theater.

Tuesday Morning Session

Address, "Substitutes," by Col. George S. Brady, Conservation and Substitutions Division, OPM.

Address, "Making the Best Use of Salvage and Reclaimed Materials," by K. C. Campbell, General Storekeeper, The Detroit Edison Co.

Plant Visit

A trip through the plant of the Ford Motor Company was arranged for Tuesday afternoon.

Fred A. Compton of The Detroit Edison Company is Chairman of the group, and Horace L. Brewer of Consumers Power Co., Jackson, Mich., is Secretary-Treasurer.

RADIO NIGHT AT SPRINGFIELD ASSOCIATION

Representatives of Broadcasting Station WIZE, Springfield, Ohio, provided a unique program for the November 12th meeting of the Springfield Purchasing Agents Association, held at the Shawnee Hotel. Presumably "on the air" for a fifteen minute program, which was staged in complete detail, the members spoke briefly of their companies and products—an excellent cross section of Springfield industry—and the purposes and program of the Association were outlined. A little later in the evening, it transpired that the entire "broadcast" had been recorded, and it

was presented by electrical transcription. Mr. Martin of the WIZE staff spoke interestingly on radio, its uses and applications, and the outlook for the future.

GOVERNMENT BUYERS ELECT NEW OFFICERS

The Pacific Northwest Public Buyers group has elected new officers for the coming year, as follows:

Chairman, Willard V. Pape, City Purchasing Agent, Seattle, Wash.

Vice Chairman, S. P. Gillette, Assistant State Purchasing Agent, Salem, Oregon.

Secretary, B. R. Nichols, City Purchasing Agent, Tacoma, Wash.

PRIORITIES MEETING AT ROCHESTER

The November 26th meeting of the Rochester Purchasing Agents Association was devoted to a consideration of priorities and related subjects. The program started with an afternoon clinic on the subject of sub-contracts, under the supervision of Malone Gregg, field representative of the Sub-Contract Division of OPM. At the dinner meeting, Paul R. Smith of the OPM Field Service, Lt. MacDonald and Lt. Halowell of the Rochester Ordnance District Office, assisted in answering questions on priorities policy and procedure.

LOS ANGELES MEETING

Edwin W. Pauley, President of The Petrol Corp., addressed the Los Angeles Purchasing Agents Association meeting on November 11th on "The International Petroleum Situation." Robert L. Grube, National Vice President, reported on the educational program of N.A.P.A. and a recent meeting of the Educational Committee at Pittsburgh. National Director Al J. Smith reported on District Council activities. President Wayne Allen, now active in the Division of Civilian Supply, OPM, at Washington, outlined the work of that division in saving scarce materials and making provision for essential civilian needs.

Approximately 175 oil company buyers, petroleum manufacturers and suppliers, attended a forum meeting arranged by Cliff Thorburn, Chairman of the Association's Priorities Committee and C. H. Tuttle, Chairman of the Oil Company Buyers' Group. The meeting was addressed by W. S. Rosecrans, OPM Coordinator; E. S. Jamison, Special Senior Consultant of the Los Angeles OPM office; and W. B. Standard, Priorities Consultant.

DISTRICT CONFERENCE AT CHATTANOOGA

Purchasing Agents of District No. 7, N.A.P.A., met for an all day conference at the Hotel Patten, Chattanooga, Tenn., on Saturday, November 15th. J. Frank Kelley, Purchasing Agent of the Electric Power Board of Chattanooga, and District Vice President, presided at the opening session and presented the conference chairman, Wells Rather. The program was as follows:

Morning Session

Welcome, by Hon. E. D. Bass, Mayor of Chattanooga.

Address, "Freight Rates in the South," by E. Del Wood, Secretary-Manager of the Chattanooga Manufacturers Association.

Discussion

Address, "Problems of Purchasing for Resale," by E. L. Pugh, Secretary of the Southern Supply & Machinery Distributors Association.

Discussion

Address, "Priorities, Allocations and Price Trends of Industrial Materials," by Harold Stein, Deputy Supervisor of Civilian Allocation Programs, Division of Civilian Supply, Office of Production Management, Washington, D. C.

Discussion

Luncheon Session

Address, "Steel Defense and Civilian Supply," by R. C. Todd, Assistant Vice President and Administrator of Sales, American Rolling Mill Co., Middletown, Ohio; member of the Sheet Steel Advisory Committee to OPM.

Discussion

Sight Seeing Tour

Reception

Banquet Session

Address, "Realism for Purchasing Agents," by F. Albert Hayes, Purchasing Agent of the American Hide & Leather Co., Boston, Mass., President of the National Association of Purchasing Agents.

James M. Alexander of the Cavalier Corp., was chairman of the program committee.

PRICE HEADS N. A. P. A. BUSINESS SURVEY COMMITTEE

George E. Price, Jr., General Purchasing Agent of the Goodyear Tire & Rubber Co., Akron, Ohio, has been appointed Chairman of the Business Survey Committee of N.A.P.A., succeeding Fred J. Heaslip of Fairbanks, Morse & Co., Chicago, who has relinquished the position because of the increasing demands of his regular purchasing job. Mr. Heaslip has headed the committee for the past six

Kimpak*

REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

CREPE WADDING

beautifies as it protects products in transit!

Today—everything is designed to beautify as it protects . . . from the clothes we wear to the rugs on our floors.

Likewise—KIMPAK* Crepe Wadding is designed to "dress up" your package while protecting it against mars and breakage.

Candlecraft Studios (Socony Vacuum) protect their packaged candles with KIMPAK.



The resilient "shock absorber" action of KIMPAK gives your product maximum protection with minimum bulk. Some users report they've decreased the size and weight of their shipping cartons since switching to KIMPAK.



Showing how Lightfoot Shultz Co. use KIMPAK in their beautiful American Regency Soap package.

KIMPAK definitely gives class to your package . . . whether it's soap or small radios. And the sales advantage of an appealing package shouldn't be underestimated.

Hill Top Orchards and Nurseries, Hartford, Mich., protect apples in gift box with 7-ply KIMPAK.



And KIMPAK puts an end to muss and fuss in your shipping room. Available in rolls, pads or sheets cut to size—and in a variety of textures. KIMPAK is inexpensive, light-weight, flexible . . . as easy to use as a piece of string.

Kimpak

REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

CREPE WADDING

*protects your product
dresses your package*

*REG. U. S. & CAN. PAT. OFF.

Copyright 1941, Kimberly-Clark Corp.

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin

Please send me full information regarding KIMPAK.

Company _____
Address _____
Attention of _____
Our product is _____

P-1241

When writing Kimberly-Clark Corporation please mention Purchasing

SECOMET DIAMOND WHEELS ARE DEPENDABLE

FASTER cut, more smoothly finished and longer lived cemented carbide tools result from using the dependable SECOMET RESINOID BONDED DIAMOND WHEELS . . . made in a wide range of standard sizes and types including peripheral, plain cup, flaring cup, dish and solid . . . write or wire for further information or details on any type of diamond wheel.

J. K. SMIT AND SONS, INC.
157 CHAMBERS STREET, NEW YORK
J. K. SMIT and SONS of Michigan, Inc., 6400 Tireman Ave.
DETROIT
W. HARTFORD PITTSBURGH CLEVELAND CHICAGO SEATTLE



Safety First

WITT CANS

PLAY THEIR PART - - -

For disposal of oily waste and other inflammable refuse, use WITT Oily Waste Cans. They bear the label of inspection and approval of Underwriters Laboratories, Inc. and Factory Mutual Insurance Companies.



WITT Cans and Pails are sturdily constructed from special analysis steel insuring longer life.

Proved from 50% to over 400% stronger in tests at Pittsburgh Testing Laboratory.

Foot operated or hand operated covers. Plain or corrugated bodies — 7 sizes.



THE WITT CORNICE CO.
WINCHELL ST. • CINCINNATI, OHIO



When writing advertisers please mention Purchasing

years. Under his leadership, the monthly survey and report has become widely accepted as an accurate and significant barometer of current business conditions and trends, used as a guide in many purchasing departments, the basis for commodity and market discussion at scores of meetings including the national conventions of purchasing men, and quoted in the financial pages of leading newspapers throughout the nation. It has been the model for a number of similar surveys on a regional basis that have also been exceedingly valuable.

Mr. Price is exceptionally qualified to carry on the work. A responsible purchasing executive in an important company whose business touches every section of the country, his buying experience includes purchasing in this company and abroad, in industry and with the Quartermaster Corps as a reserve procurement officer, an unusually complete background for the interpretation of business influences in this time when national defense is a major factor. He is a graduate electrical engineer, a student of practical economics. Four years of service on the Executive Committee of N.A.P.A., and a highly successful term as National President in 1940-1941, have gained for him wide friendships, prestige and respect among the buyers of the United States and Canada.

The Business Survey Report is an analysis, summary and interpretation of the opinions and buying policies of more than 300 representative Purchasing Agents, keyed to the needs of industry in its review of general business conditions, commodity prices, inventories, collections, credit, employment, and buying policy, on a sectional and national basis.

KELLEY NAMED VICE-PRESIDENT

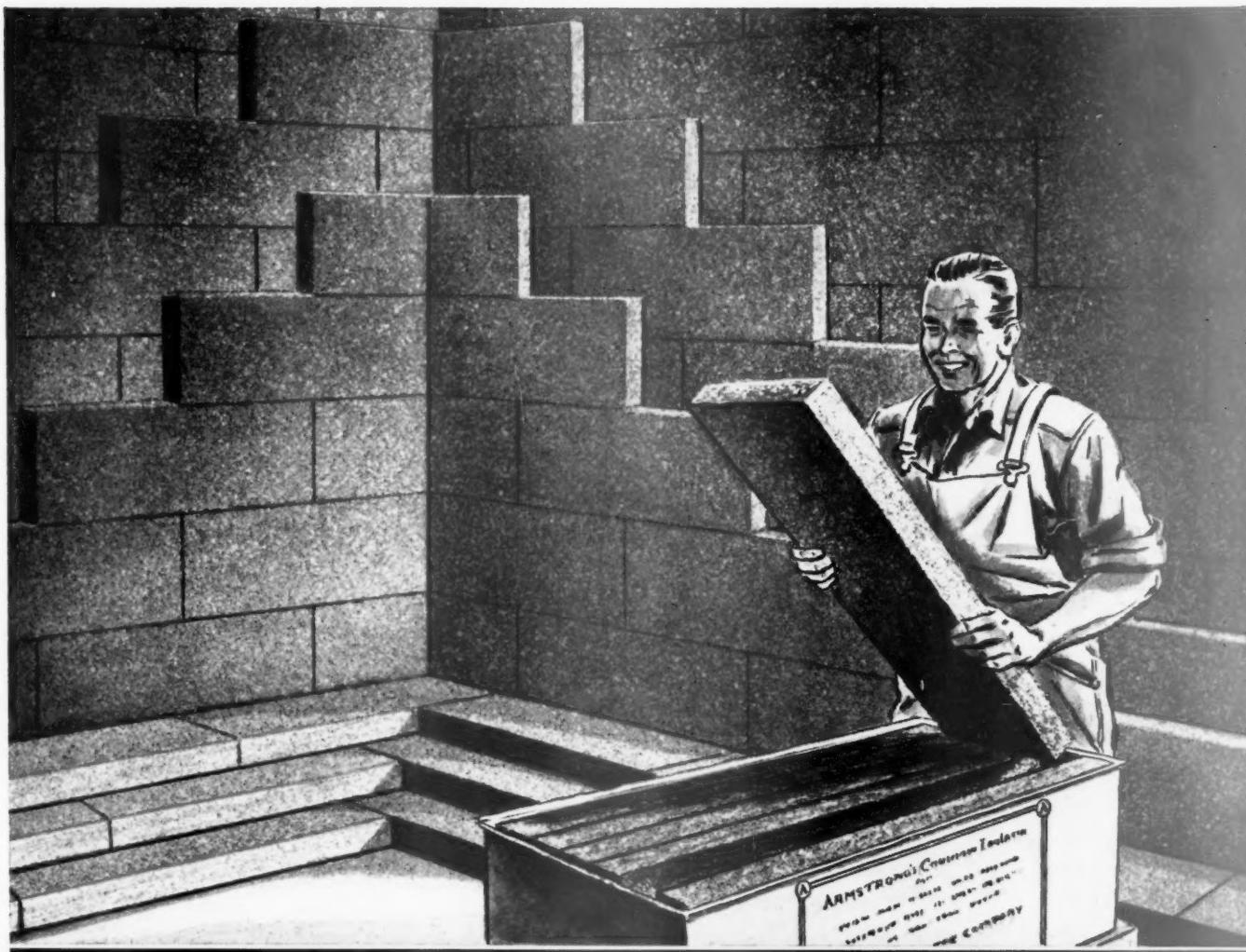
J. Frank Kelley, in charge of the purchasing division of the Electric Power Board of Chattanooga, has been appointed Vice President of the N.A.P.A. for District No. 7, to serve the unexpired term of the late J. Mirritt Gamble. Mr. Kelley was President of the Chattanooga Association in 1938, and National Director in 1939-1940. District No. 7 includes Birmingham, Chattanooga, Louisville, and New Orleans.

CHINESE CONSUL ADDRESSES NEW ORLEANS BUYERS

"The Burma Road, and What It Means to China," was the topic of a timely and interesting address at the November 10th meeting of the New Orleans Purchasing Agents Association. The speaker was Hon. Gung Hsing Wang, Chinese Vice Consul.

PRIORITIES MEETING AT TULSA

Alfred E. Ballin, recently appointed manager of the Tulsa District Field Office, Office of Production Management, spoke on "Priorities" and led a discussion of the subject at an open meeting of the Tulsa Purchasing Agents Association, November 12th.



CORKBOARD insulation is again AVAILABLE

THE cork supply situation is much improved. Cork is still under OPM control but the Government's reserve stock pile, to care for emergency requirements in the event Spanish and Portuguese ports are closed, has been substantially increased. This means that shipments now arriving can be utilized to meet most needs for corkboard insulation, first for defense work and then for work involving food preservation. Restrictions on the use of corkboard for insulating roofs and airconditioning ducts still apply.

Whatever may be your needs for low temperature insulation, get in touch with your Armstrong Cork man. Let him know how much corkboard you need, how it will be used, and when you will want it delivered. We expect to be able to make prompt delivery of all usual quantities.

ties dependent upon continued favorable shipping conditions and upon Government requirements. We will be glad to give you information quickly about your specific needs.

Get in touch with us early . . . if possible even before drawings are prepared . . . so that our insulation specialists will have time to work out your problem with you in the most effective way. This early information will help us to give you the best possible delivery service.

Prompt Delivery of CORK COVERING

Armstrong's Cork Covering for cold lines and fittings is used largely

in defense plants or in plants requiring refrigeration to protect perishable foodstuffs. Due to this fact and because the relatively small amount of cork used has not hindered the Government's cork reserve program, we can meet practically all needs for cork covering promptly. This insulation is made in sizes for all standard piping.

For information on deliveries of corkboard and cork covering call our nearest office or distributor, or write direct to Armstrong Cork Company, Building Materials Division, 915 Concord Street, Lancaster, Pa.



ARMSTRONG CORK COMPANY

Insulation Headquarters

★ CORKBOARD ★ CORK COVERING ★ FIBERGLAS* ★ TEMLOK ★ INSULATING FIRE BRICK ★
*Reg. U. S. Pat. Off. O.-C. F. Corp.

When writing Armstrong Cork Company please mention Purchasing



Prompt Oakite Deliveries Help You Avoid Production Delays on Defense Orders!

For one dependable safeguard against costly delays or interruptions in production cleaning, specify Oakite materials. Ample warehouse stocks are maintained in 35 strategically located cities, making possible 24-hour delivery service to plants in over 4,800 communities. Thus, you can count on Oakite for the prompt shipments demanded by sharply accelerated manufacturing schedules.

Your inquiries invited . . . write today.

OAKITE PRODUCTS, INC., 54 Thames St., NEW YORK



Have Defense Orders created new cleaning problems in your plant?

Then why not avail yourself of the same kind of competent assistance that this Oakite Representative is giving to Mid-Western production and purchasing executives?

Your search for better ways to SPEED-UP production by putting cleaning on a fast, SAFE basis can be made more successful if you make use of the specialized training and knowledge of the Oakite Representative in YOUR territory. Write to have him call. There's no obligation, of course.

Representatives in All Principal Cities of U.S. and Canada

OAKITE Certified CLEANING

MATERIALS . . . METHODS . . . SERVICE

PAY NO MORE —but Get this EXTRA SHOVEL VALUE!

EDGES GUARANTEED SPLIT-PROOF



The Blades of Ingersoll Shovels are made exclusively from fine Tillage Steel. It is the same type of steel we roll in our New Castle Mills to produce the Discs for America's largest Implement Manufacturers. That's why Ingersoll shovels give you so much more value without extra cost. That's why you will find attached to the handle of each Ingersoll Shovel, a booklet describing these Tillage Steel Blades, with Edges that are guaranteed split-proof.

Available in all types and grades, round and square points, black or polished finishes. All Alloy, A, B, and most C Grades are heat-treated.

Write for Catalog and Prices. Address New Castle Plant, Dept. P.

INGERSOLL STEEL & DISC DIVISION
BORG-WARNER CORPORATION
NEW CASTLE, INDIANA

Plants: New Castle, Ind.; Chicago, Ill.; Kalamazoo, Mich.

INGERSOLL SHOVELS

"A
Borg-Warner
Product"

When writing advertisers please mention Purchasing

GOVERNMENTAL BUYERS PLAN FOR CONVENTION

The California State, County and Municipal Purchasing Agents Association has set the dates for its 1942 convention as February 19, 20, and 21. The meeting will be held at San Diego, with headquarters at the San Diego Hotel. Van L. Shaljian, City Purchasing Agent at Stockton, is President of the Association.

1 1 1

MOTLEY ADDRESSES NEW YORK BUYERS

Speaker at the November 18th meeting of the New York Purchasing Agents' Association was "Red" Motley, Vice President of the Crowell-Collier Publishing Co.; his topic—"Selling America." The meeting was preceded by a discussion forum, with J. L. Crosbie presiding.

Members located in the Passaic-Bergen district of New Jersey have organized a dinner discussion group, which will meet on the second Tuesday of each month at the Passaic City Club. M. D. McBurney of the Royce Chemical Co. is acting as discussion leader.

1 1 1

NORTHERN CALIFORNIA ASSOCIATION MEETINGS

The eleventh annual joint meeting of the Purchasing Agents Association of Northern California and the East Bay Manufacturers' Committee of the Oakland Chamber of Commerce, was held at the Hotel Leamington, Oakland, on November 13th.

San Francisco luncheon meeting programs during November included an address by Warden Clinton Duffy on "The Evolution of San Quentin Prison," and a motion picture of "The Collapse of the Tacoma Bridge," shown through courtesy of the Pacific Bridge Co.

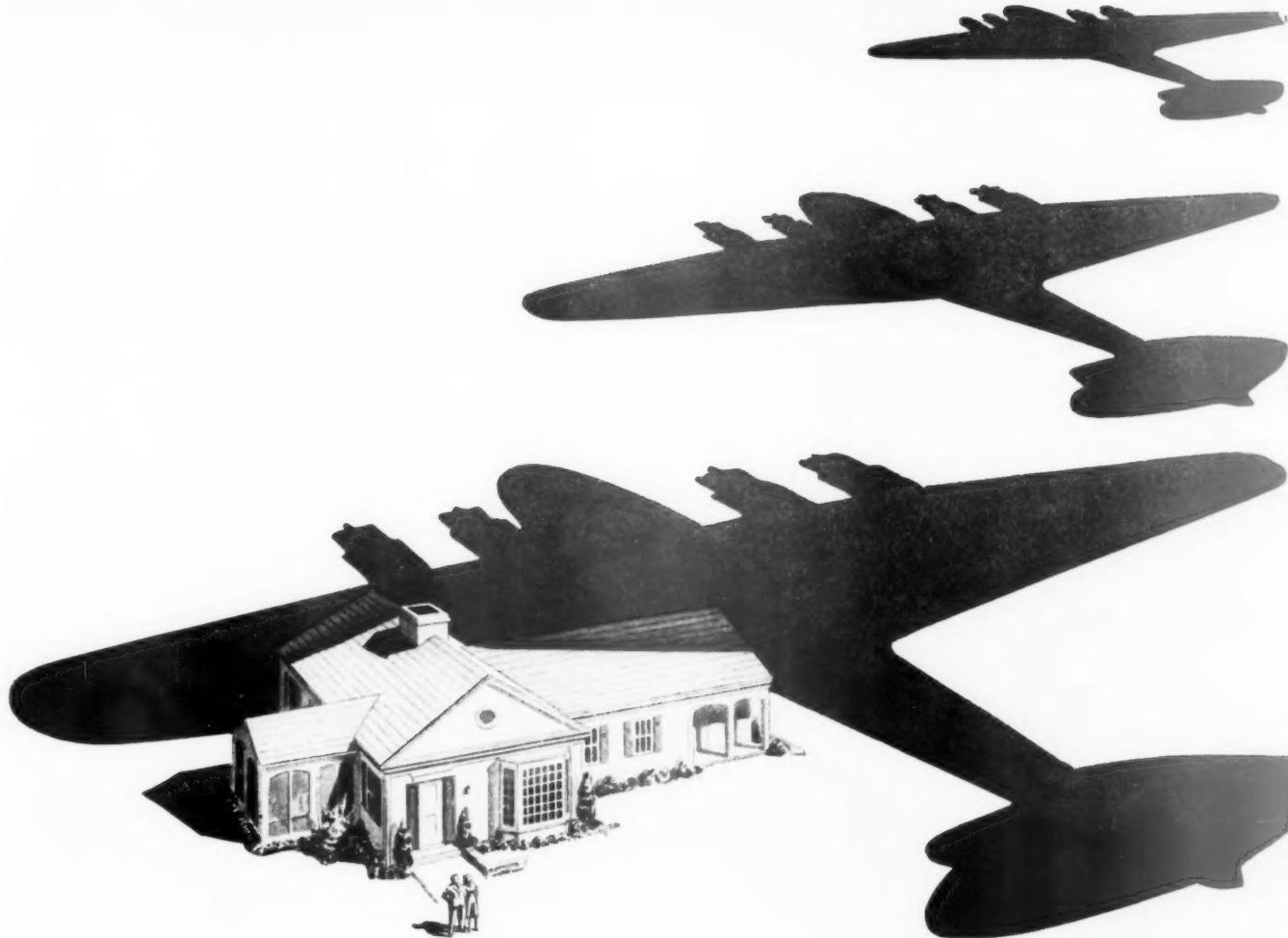
Oakland luncheon meetings of the East Bay Group included an address on "National Defense Material Control," by Lt. H. M. Shanahan, U.S.N.; "Atom Smashing De Luxe," a description of the new cyclotron being built by the University of California, by George A. Pettit of the University staff; and an illustrated lecture on "Goofy Gadgets, or Inventors on the Loose," by Charles O. Bruce, patent attorney.

The Association will celebrate its 25th Anniversary with a dinner dance on December 16th, at the St. Francis Hotel. Arthur Woodman is chairman of the committee in charge, assisted by all the "Gaveliers," past presidents of the Association.

1 1 1

EASTERN NEW YORK BUYERS MEET AT SCHENECTADY

The November meeting of the Purchasing Agents Association of Eastern New York was held at the Mohawk Club, Schenectady, on the 27th. Alex Miller, Industrial Specialist in the Iron and Steel Branch, OPM, spoke on "Iron and Steel Scrap." A. K. Munson, National Director, reported on the District Council meeting in New York City.



WHEN THE SHADOWS ARE GONE . . .

As spring follows winter, so peace will return, allowing the world to resume its progress to better ways of doing things. Far-sighted men are thinking of the future, keeping tomorrow in mind while doing today's urgent task.

Today we of Keasbey & Mattison willingly give precedence to orders from defense industries, as you would have us do. Our plants are running day and night, we are enlarging our working force and adding to our machine capacity. Even so we are finding it difficult at the present time to

deliver some products to many of our customers.

But, like you, we are keeping one eye on the future. When normal times return . . . when we are able to ship you everything you want, when you want it . . . we expect to have found ways of doing things better, offering you asbestos products that will last longer, prove more economical and serve your purposes better.

To that end, we need your help now. Can you, who use asbestos materials, give us some ideas for tomorrow? Have you encountered

some specific problem that could be overcome by a new application of asbestos? We will give thorough consideration to any suggestion, in the hope that it will prove to be practical from a manufacturing standpoint. We'd greatly appreciate a letter from you.

* * *

*Nature made asbestos;
Keasbey & Mattison has made it
serve mankind . . . since 1873.*



KEASBEY & MATTISON
COMPANY, AMBLER, PENNSYLVANIA

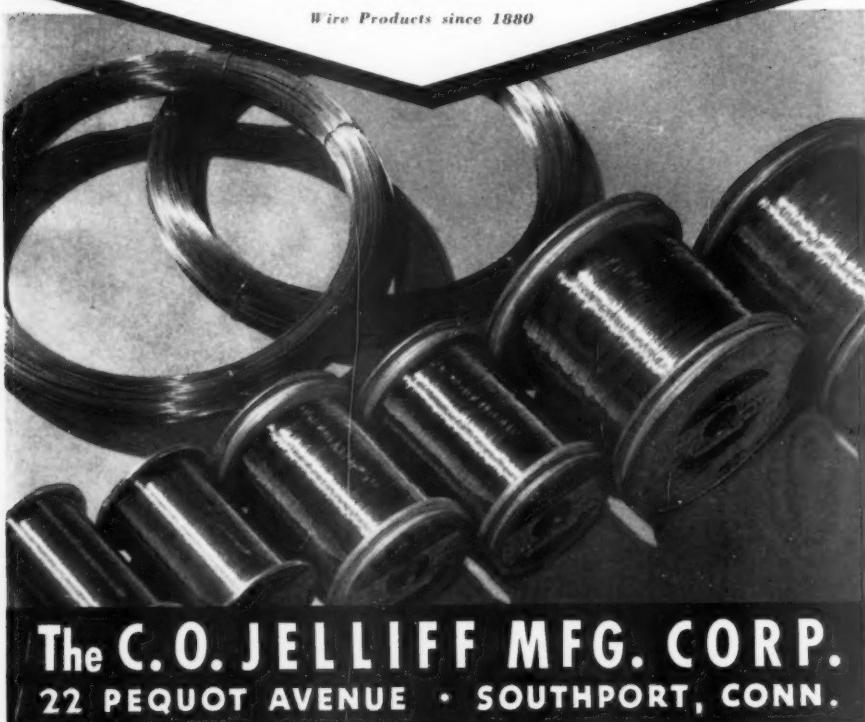
When writing Keasbey & Mattison Company please mention Purchasing

JELLIFF FINE PRECISION WIRES

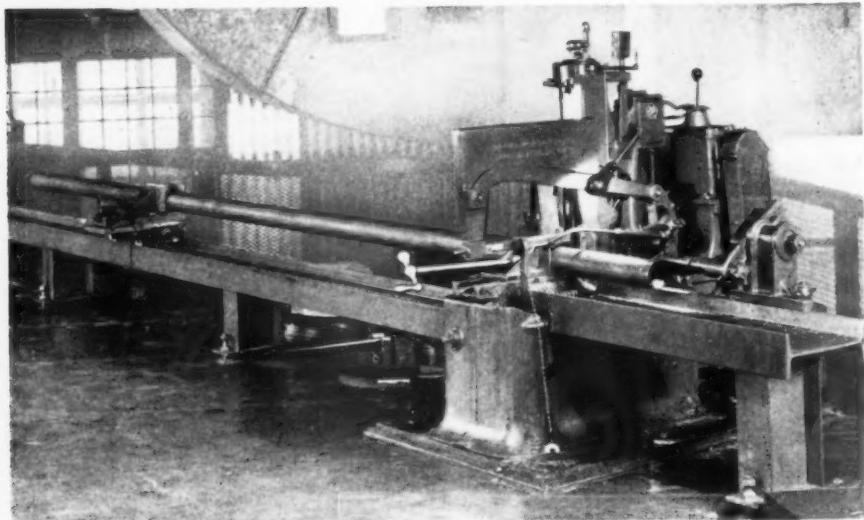
Producing .0009" diameter and larger in Nickel-Chromium, Copper-Nickel, Kanthal, and other alloys for Electrical, Chemical, and Mechanical uses.

Let us quote on your requirements.

Wire Products since 1880



**The C. O. JELLIFF MFG. CORP.
22 PEQUOT AVENUE • SOUTHPORT, CONN.**



MARVEL
SAWS

**cut-off
metal the
economical
way**

The most economical method of cutting-off identical pieces from bar steel is with a MARVEL Automatic Production Saw. It will give you more pieces per hour, per machine and per dollar cost than any other accurate cutting-off method. Figured in cost per piece, it will have the lowest tool cost and the lowest labor cost too, because MARVEL Automatic Saws operate with no more attention than an automatic screw machine. They keep chip loss down to a minimum and on many jobs will give you extra pieces per bar. For fast automatic production or for single-cut miscellaneous work, MARVEL 6A or 9A Hack Saws are fast, accurate tools. Capacities 6" x 6" or 10" x 10", single or nested bars. Write today for Bulletin No. 600.

ARMSTRONG-BLUM MFG. CO.

"The Hack Saw People"

5700 Bloomingdale Ave.

Eastern Sales Office: 225 Lafayette St., New York

Chicago, U. S. A.

When writing advertisers please mention Purchasing

DOXSEY AT AKRON

Walter S. Doxsey, of the American Steel Warehouse Association, addressed the Akron Purchasing Agents Association at their November 18th meeting, at the Akron City Club.

CANTON PURCHASERS DISCUSS SUBSTITUTES

"Substitute Materials" was the subject of a round table discussion and exchange of experiences at the November meeting of the Canton and Eastern Ohio Purchasing Agents Association, held at the Elks Club in Canton on the 19th.

PROVIDENCE MEETING

The November meeting of the Rhode Island Purchasing Agents Association was held at the Narragansett Hotel, Providence, on the 24th. Stuart F. Heinritz, Editor of PURCHASING, spoke on the topic, "The Spotlight is on Purchasing."

WEISMAN ADDRESSES BUFFALO BUYERS

Russell Weisman, economist and special writer for the Cleveland *Plain Dealer*, addressed the Buffalo Purchasing Agents Association on "Some Problems of National Defense," at the November 12th dinner meeting, held at the Hotel Lafayette. Dr. M. A. Brumbaugh of the University of Buffalo led a discussion of economic and market conditions.

NEW OFFICERS AT DETROIT

Paul T. Farrell, Purchasing Director of the Great Lakes Steel Corp., has been installed as President of the Detroit Purchasing Agents Association for the coming year. Other new officers are:

1st Vice President, C. I. Renwick of Bruce Products Corp.

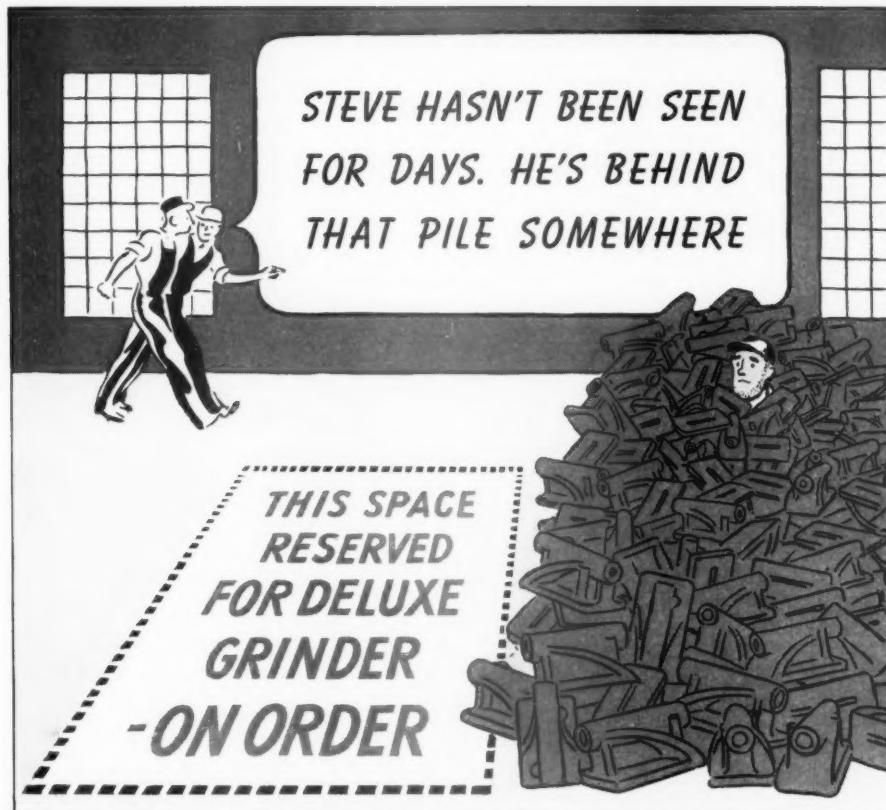
2nd Vice President, B. W. Johnson of R. C. Mahon Co.

Treasurer, R. M. Parkin of Charles A. Strelinger Co.

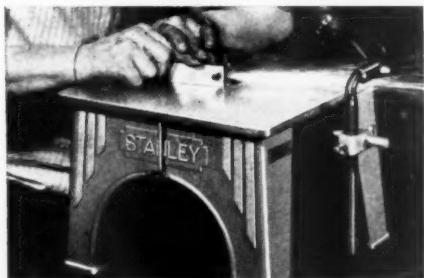
INDUSTRIAL EXHIBIT AT SEATTLE

The twelfth annual Products Exhibit of the Washington Purchasing Agents Association was held at the Olympic Hotel, Seattle, November 4th. More than sixty exhibits presented recent developments in industrial materials and equipment. Herbert H. Clarke, Association President, turned over the gavel to State Purchasing Agent Harold D. Van Eaton as toastmaster for the banquet session. The principal speaker was Dr. Bruce R. Baxter, Methodist Bishop of Portland and formerly President of Willamette University, who discussed "The Stuff From Which a Purchasing Agent Is Made." Mayor Earl Millikin of Seattle, Mayor S. Frank Spencer of Everett, and Mayor Harry P. Cain of Tacoma were among the honor guests.

Carroll G. Holloway of Isaacson Iron Works was chairman of the committee in charge, assisted by Roy C. Hull of the DuPont Co., Morgan W. Rowland of



Is "Waiting For Big Machines" Stifling Your Production?



STANLEY CONTOUR GRINDER — high speed grinder for finishing dies, gauges, templets, finding blanks; correcting hardening distortions. Scores of other light grinding jobs! Tilts to 45°.

Check those jobs which are held up by slow delivery of big machines. Get your Stanley Distributor in! Invite him to show you how and where Stanley Electric Tools can speed up your production. To demonstrate how accurately and fast these tools can handle many time-consuming jobs.

He will show you Stanley Unishears for cutting sheet materials. Stanley Grinders—Contour, Toolroom, Bench and heavy Portable types. Stanley Electric Hammers, Drills, Screw Drivers and Safety Saws. Every one of these tools will help you cut corners without costly delays. If you prefer, write for literature. Stanley Electric Tool Division, The Stanley Works, 156 Elm Street, New Britain, Connecticut.



STANLEY FLEXIBLE SHAFT GRINDER — has 42" shaft; handle with collet type $\frac{1}{4}$ " chuck. Used for fast grinding — internal or external — on tools, dies, castings. Direct drive $\frac{3}{8}$ H. P. motor, 18,000 R. P. M.

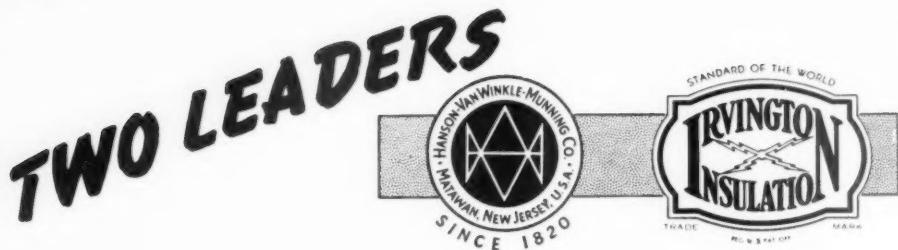


STANLEY TOOL ROOM GRINDER — can be used freehand or in milling machine, shaper, lathe. Handles external or internal grinding on dies, machine parts, cutters, etc. Drives wheel up to $1\frac{1}{2}$ " x $\frac{1}{2}$ ".

STANLEY
Electric Tools



STANLEY "FLUD-LITE" EYE SHIELD — has two 4" x 6" safety glass windows; two frosted, shadowless bulbs. Adjustable guards. Gives 30% more visibility.



GET TOGETHER ON GENERATOR INSULATION

Hanson-Van Winkle-Munning Company, leaders in the manufacture of electro-plating generators for 65 years, specify IRVINGTON and HARVEL INSULATING VARNISHES for perfect insulation in their generator armatures and fields.

Development of these Varnishes is the result of Irvington's 35 years' experience in meeting demands for insulating varnishes of the highest quality for dipping, brushing, spraying, vacuum and pressure applications. There's an IRVINGTON or HARVEL INSULATING VARNISH for every electrical need.

IRVINGTON VARNISHES are of the oxidizing type, containing drying oils. HARVEL 512-C and 612-C Baking VARNISHES are phenol-aldehyde synthetic resins made from cashew nut shell liquid, solidifying throughout by heat induced chemical polymerization.

In the IRVINGTON line—Clear and Black Baking Varnishes; Clear and Black Air Drying Varnishes; Black Insulating Paint; Black Air Drying, Baking and Flashing Core Plate Varnishes; Clear and Black Oilproof Finishing Varnishes; Clear Sticking Varnish; Red Oilproof Enamels, Gray and Black Machinery Enamels. In the HARVEL line—Baking and Air Drying Varnishes and Red Finishing Enamel.

Send for the new 34 page HARVEL and IRVINGTON INSULATION VARNISH CATALOG. Write Dept. 76.



Let SIGNODE Suggest HOW TO SHIP YOUR Defense Orders

Manufacturers Today Are In Many Instances Producing
Unfamiliar Items . . . Facing New Problems . . . Shipping
Articles They Never Shipped Before



• Signode engineers are completely familiar with government specifications for loading and bracing both carload and less than carload shipments of different materials required for the defense program.

Manufacturers with defense contracts must of necessity devote most of their time to production problems—take advantage of Signode's experience and turn over the responsibility of shipping to Signode's engineers.

A Signode Representative Is Nearby and Ready to Counsel On Call

SIGNODE STEEL STRAPPING CO.
Chicago: 2602 N. Western Ave.
Brooklyn, N. Y.: 371 Furman St. San Francisco, Calif.: 454 Bryant St.

Representatives in Principal Cities Throughout the United States and Canada

SAFE ARRIVAL by the CARLOAD or L. C. L.

ORDNANCE — VEHICLES —
MACHINERY EQUIPMENT —
FOOD EQUIPMENT — RAW
MATERIALS — SUPPLIES

In Daily Touch with the New Specifications



25 Years of
Packing Improvement

SIGNODE

When writing advertisers please mention Purchasing

Bremerton, Oscar Strass of Northern Life Insurance Co., E. R. Thatcher of Standard Oil Co. of California, A. R. Van Sant of Lake Washington Shipyards, George S. Drury of Northwest Lead Co., and Earl C. White of the Washington Purchasing Agent and Manufacturer.

1 1 1 OREGON MEETINGS

Recent topics of discussion at the Oregon Purchasing Agents Association were "Priorities," led by Clyde Ginn, and "Co-operation of the Better Business Bureau with OPA on Price Regulation," by Lyle M. Janz of the Portland Better Business Bureau.

1 1 1 MEETING AT ELMIRA

"The Spotlight is on Purchasing," was the subject of an address by Stuart F. Heinritz, Editor of PURCHASING, at a meeting of the Elmira Purchasing Agents Association, held at the Mark Twain Hotel, November 27th.

1 1 1 CHICAGO ASSOCIATION STAGES PRODUCTS EXPOSITION

The thirteenth annual Members and Advertisers Products Exposition sponsored by the Chicago Association of Purchasing Agents, was held at the Hotel Sherman on Wednesday and Thursday, November 12 and 13. The exhibits were on display in the Main Exhibit Hall, Grand Ballroom and Mezzanine Floor, attracting a large and interested audience throughout the two-day showing. A special feature was the showing, on Wednesday, of two sound films—"There's a Job to be Done," the dramatic story of stainless steel in national defense, shown by courtesy of the Allegheny-Ludlum Steel Co.; and "Know Your Money!", a Government film on counterfeit currency.

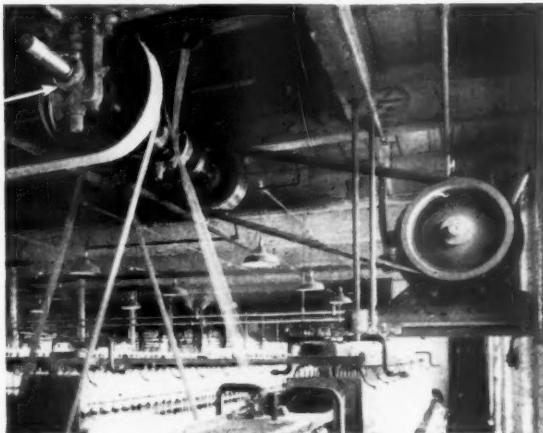
At the Wednesday luncheon meeting, Carl Taylor, Executive Vice President of the Wisconsin Building and Loan League, Milwaukee, spoke on "What Must We Do to Defend America?"

F. C. Boggess, Director of Purchases for the Johns-Manville Products Corp., Waukegan, was toastmaster at the banquet on Thursday evening, introducing as the principal speaker Dr. John L. Davis, humorist and philosopher, who discussed "This Present Age." The *Chicago Purchaser* trophies were awarded for the most attractive, most original, and most informative booths in the exposition.

John W. Kleder of United Wallpaper Factories, Inc., was general chairman of the Exposition. George J. Stack of International Tag & Salesbook Co., and Ralph W. Lohse of The Amco Corp., served as vice chairmen. H. C. Bauer of Revere Copper & Brass, Inc., was in charge of program and entertainment. The committee included: Arthur F. Dallia of Justrite Mfg. Co., William A. Selle of D. O. James Mfg. Co., N. B. Brown of Barret-Christie Co., Frank J. Callero of Tallman Robbins & Co., Roy O. Carlson of Automatic Spring Coiling Co., M. R. DeBaets of Bowman Dairy

Are You Wasting It?

There are only two ways to get additional power for our defense machine. One is new generators. That's someone else's worry. Another is to avoid waste of power now available. *That's our job - industry's job.* And in your own lineshafts, or drives, or conveyors, you may now be wasting enough precious power to run someone else's plant! For example:



**This Plant* Released
168 H.P. For Defense**

Its seven 50 h.p. motors were running overloaded up to 72 h.p.! Drives were modernized, plain bearing hangers were replaced with Fafnir Ball Bearing Hanger Boxes. Results? Motor loads dropped to 48 h.p., and without previous high starting torque! One hundred sixty-eight horsepower was released to other defense plants in the area.



The Unit That Made It Possible

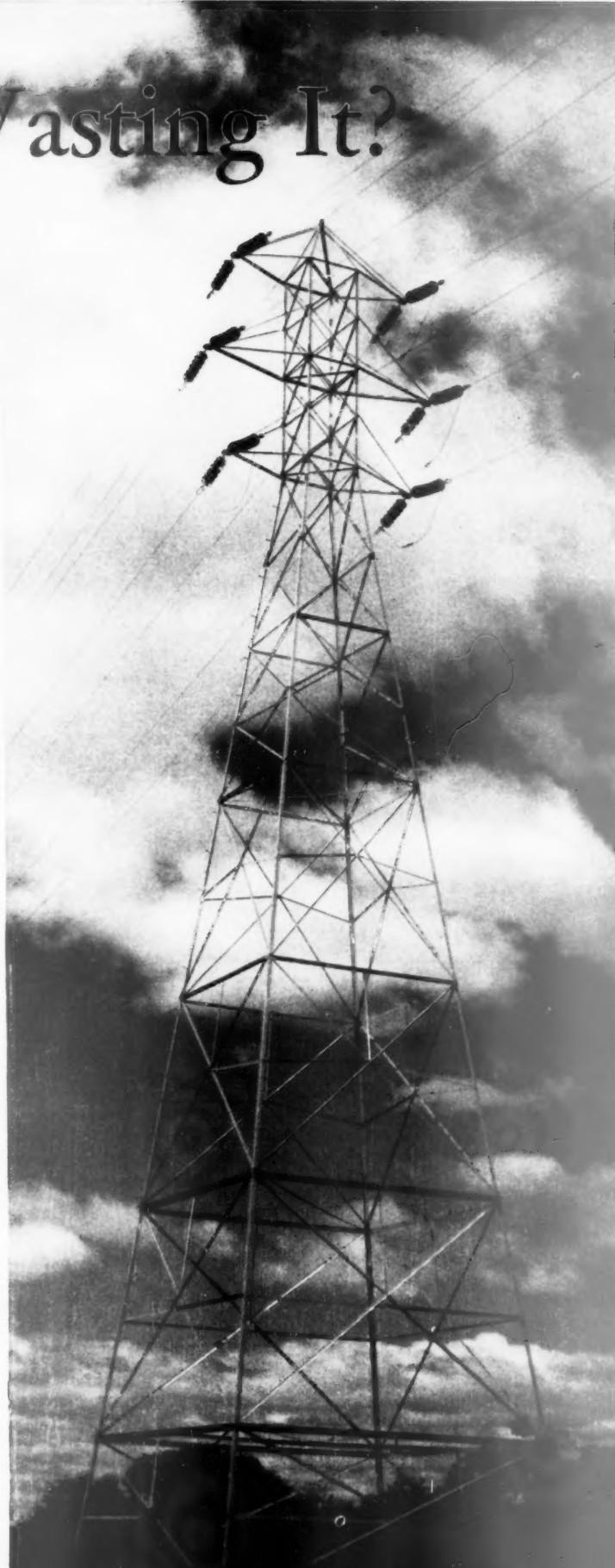
And not only possible, but practical! For no machining, shaft shoulders, or precision fits are required to install this or any other Fafnir Transmission Unit! Bored for slip fit on stock shafting, the Wide Inner Ring ball bearings lock to the shaft with a finger-twist. Your drive is free of breakdowns, friction losses. You lubricate a few times a year instead of twice a week . . . Don't let the friction of outmoded drives steal defense power from your area! Call in your Fafnir distributor without delay. The Fafnir Bearing Company, New Britain, Conn.

*name on request

FAFNIR

Ball Bearings

THE BALANCED LINE - MOST COMPLETE IN AMERICA

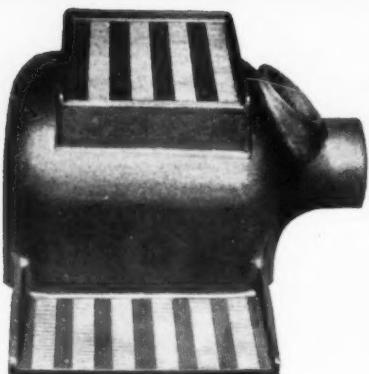


Conserve Vital Power for Defense

When writing The Fafnir Bearing Company please mention Purchasing

For Gray Iron Castings

**SEE
FOREST
CITY**



FOREST CITY produces castings of soft gray iron, high test semi-steel or alloy semi-steel. A recent soft gray iron casting for a housing cover produced in one of our foundries is pictured above. Forest City supplies castings to widely diversified fields including:

*Automotive
Pressure Pump
Office Equipment*

*Electrical and Household Appliances
Building Equipment
Machine Tools and Equipment*

This wide diversification is backed by 50 years of casting experience—an experience that is at your command in meeting your casting requirements.

THE FOREST CITY FOUNDRIES COMPANY

2500 WEST 27TH STREET

CLEVELAND, OHIO



Your TOUGHEST Defense against BROKEN FLOORS!

If you want smooth, efficient concrete floors, even under the most punishing traffic conditions . . . make repairs or resurface an entire area with tough RUGGEDWEAR Resurfacer. No chopping or chipping required. Merely sweep out the spot to be patched—mix the material—trowel it on. Holds solid and tight right up to irregular edge of old concrete. Cellulose-Processed to provide a firmer, tougher, smoother, more rugged wearing surface. Used indoors or out. Dries fast. Low in cost.

Valuable 74-page "HAND BOOK OF BUILDING MAINTENANCE" available to those requesting on business letterhead.

MAKE THIS TEST!

FLEXROCK COMPANY
2319 Manning St., Phila., Penna.
Please send me complete
RUGGEDWEAR information
details of FREE TRIAL
OFFER—no obligation.

Name _____
Company _____
Address _____
City _____ State _____



DAYTON GRINDING WHEELS

A complete line of abrasive wheels.
Inquiries given prompt attention.

SIMONDS WORDEN WHITE CO.,
DAYTON, OHIO

Co., A. M. Quarles of Stevens Hotel Corp., R. H. Young of Revere Electric Supply Co., E. L. Halbert of Shell Oil Co., LeRoy Pape of Continental Illinois National Bank & Trust Co., A. G. Andrews of De Met's, Inc., B. A. Wojciak of Deep Rock Oil Corp., C. Carl Jahrling of Rotary Seal Co., and George E. Fischer of Kester Solder Co.

INDUSTRIAL EXHIBIT AT CINCINNATI

A highly successful industrial exhibit was presented under the auspices of the Cincinnati Purchasing Agents Association, on November 6, 7 and 8, at the Netherland Plaza Hotel. Fifty-six attractive and informative booths showed latest developments in commercial and industrial equipment and supplies in wide variety.

Mayor James Garfield Stewart was toastmaster at the Thursday dinner meeting. The principal speaker was Lt. Commander Carlos Fallon of the Colombian Navy, whose topic was "A Good Neighbor Speaks for Himself."

At the conclusion of the exhibit on Saturday evening, there was a cocktail party, dancing, and midnight supper, in the Hall of Mirrors. Drawing for the door prize were held at this time, and plaques were presented for outstanding exhibits.

The committee chairmen for the three-day exhibit were:

General Chairman, Albert B. Closs.

Vice Chairman, Raymond A. Potts.

Coordinator, Lawrence L. Werner.

Treasurer, Robert J. Duerler.

Secretary, Robert J. Nieman.

Sales Promotion, C. W. Franklin.

Publicity, Robert G. McIntosh.

Hotel, Ken K. Boyd.

Booths and Decorations, Edward C. Frederick.

Invitations, Harry Fenner.

Entertainment, Lawrence W. Fryberger.

Awards and Registration, William McK. Reis.

MILWAUKEE MEETING

The November meeting of the Milwaukee Association of Purchasing Agents, held on the 18th at the Elks Club, featured a duck dinner and a general sports program, including motion pictures. The meeting was preceded by an afternoon commodity conference, at which recent government rulings were discussed.

MONTREAL BUYERS PRESENT LECTURE COURSE

The Purchasing Agents Association of Montreal, in collaboration with Sir George Williams' College, presented a series of lectures by purchasing executives for the benefit of business students. Despite the fact that classes were held at the close of the regular college day, an average attendance of forty students attended the lectures, and twenty



SPOTTED AT HANDY POINTS, Black & Decker Bench Grinders save steps and promote greater efficiency in tool sharpening, grinding, polishing, buffing and wire-brushing. 4 powerful models, from 6" Junior to 10" Heavy Duty.



GRINDING CASTINGS with Black & Decker Portable Electric Grinder. Six models, with capacities from 2" to 8" wheel sizes, to help men do a faster and better job of grinding, wire-brushing and buffing.



ACCURATELY CUTTING sheet metal with Black & Decker Lectro-Shear. A speedy tool for making straight, curved or irregular cuts in steel, iron, aluminum, etc. Two models for stepping up production metal cutting.

Let "ELECTRIC TOOL HEADQUARTERS" Help You
use ALL the SKILL of SKILLED MEN



PRODUCTION DIE GRINDING with Black & Decker Electric Die Grinders permits tool-makers and other skilled men to do faster, more accurate work. Three precision models.

Skilled workmen deliver greater production when they use good tools. That's why Black & Decker Portable Electric Tools with their top quality, greater power, more compact size and better balance—enable your skilled men to *apply all their skill* to the job. To help you select the most efficient tools, Black & Decker offers—

1. The engineering "know-how" to produce tools specifically designed to solve definite problems; tools that will last longer, give more satisfactory service;
2. 120 different types of portable electric tools, a few of which are illustrated here;
3. Dependable advice on tooling up, through the largest field force in the electric tool industry;
4. A convenient and informed source of supply, through leading distributors in all principal cities;
5. Prompt repair and parts service from 26 factory-owned service branches located coast-to-coast.

Ask your jobber to demonstrate the tools you need to boost the output from your skilled men, or write: The Black & Decker Mfg. Co., 764 Penna. Ave., Towson, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker
PORTABLE ELECTRIC TOOLS

When writing The Black & Decker Mfg. Co. please mention Purchasing



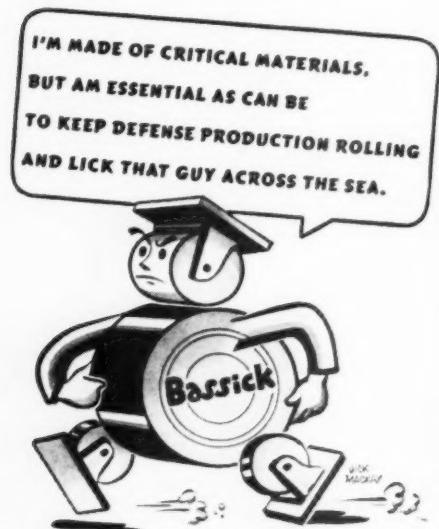
Send for "Assembly Tool Handbook"
Contains 60 pages, with photographs, charts, graphs, screw and bolt specifications to help you solve assembly problems. Write today—it's FREE!

Bassick CASTERS

**"The Machine Tools
of Motion"**



Production of Bassick Truck Casters has been more than doubled to meet the requirements of defense industries and we are doing everything possible to fill your needs promptly.



Whether you want to move tanks or trucks there are sizes and types of Bassick Casters to do the job—speedily, dependably and economically. In times of peace or war it will pay you to standardize on Bassick Casters.

THE BASSICK COMPANY
Bridgeport Connecticut
Division of the Stewart-Warner Corp., Chicago, Ill.
Canadian Factory:
STEWART-WARNER-ALEMITE CORP.
OF CANADA, LTD., BELLEVILLE, ONTARIO

took the examination at the end of the course. The subjects and speakers were:

"The Place of Purchasing in Business," by Sydney E. Webster of Dominion Textile Co., Ltd.

"The Routine of a Purchasing Office," by Eustace Titt of Canadian National Railways.

"The Personnel of a Purchasing Office," by John Crawford of Sun Life Assurance Company of Canada.

"Sales Contacts and Sources of Information," by J. S. M. Hayes of Shipping Containers, Ltd.

"Stock Control and Inventory System," by A. Leclerc of Sultana, Ltd.

"The Relationship of Purchasing to Other Departments," by H. D. Caplan of Building Products, Ltd.

tional Association of Manufacturers, in sponsoring a luncheon and afternoon priority clinic on November 25th. The plan was originated by P. B. Zoeller, Purchasing Agent of the A. M. Byers Co. The following officials of OPM participated in the conference:

Charles F. Cruciger, Pittsburgh representative.

John Martin, Assistant Director of Policy.

Stanley Adams, Chief Consultant, Iron and Steel Branch.

Mason Mangum, Head of the Industrial Contact and Education Unit.

A. L. Williams, Chief Administrator, Defense Supplies Rating Plan.

Jerome Low, Maintenance and Repairs, P-22 amended.

William P. Homans, Coordinator, Northeastern Section.

Wilbur Nelson, Maintenance and Repairs for Mines.

HAYES AT LOUISVILLE

F. Albert Hayes, President of N.A.P.A., addressed the Louisville Purchasing Agents Association at the November 18th meeting. There was also a talk on "Priorities" by Lt.-Col. Gray, and reports of the District Council meeting at Chattanooga.

PRIORITY CLINIC AT PITTSBURGH

In place of the usual November meeting, the Pittsburgh Association of Purchasing Agents joined with the OPM, Pittsburgh Chamber of Commerce, Tri-State Industrial Association, and Na-

NEW ENGLAND ASSOCIATION HEARS C. E. SMITH

Charles E. Smith, Vice President in charge of Purchases and Stores for the New York, New Haven and Hartford Railroad, addressed the November 10th meeting of the New England Purchasing Agents Association at Schrafft's, in Boston. His topic was "The Procurement of Materials Under the Defense Program." Mr. Smith is a graduate of



from the Original by Allen Houser, Grandson of Geronimo

Sabotaged . . . by Old Style Methods . . . !

★ Stopped dead by primitive means . . . crude methods are a charge in peace—in war a weak defense!

RELAYS by GUARDIAN . . .

Modern as tomorrow's airplane—Relays by Guardian must be up-to-the-minute because they're specified on the planes of tomorrow as well as today's Trainers—Fighters—Bombers—Tanks—for Transmitters—Turrets—Bombing Equipment—Fire Control—or practically every defense job you figure.

Do you need Gun Switch Handles—Turret Controls—Relays that weigh less than $\frac{1}{2}$ ounce—Double Pole, Double Throw Control (Thumb-size, one-ounce weight)—Solenoids—or a two-pound Contactor to handle 1000 amp. surges?

WITH A TWO-YEAR START—GUARDIAN IS READY WITH TODAY'S DEFENSE CONTROLS—GOVERNMENT APPROVED!

Planning for TOMORROW—there's a good chance we have your 1942 control on the shelf right now! Send blueprint for specific recommendations.

FREE—Initial Your Letterhead for Catalog "P". Write

GUARDIAN
1635 W. Walnut Street

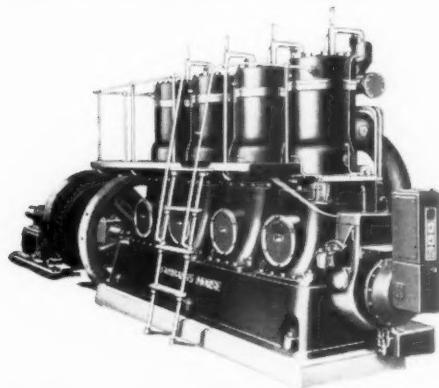


ELECTRIC
Chicago, Illinois



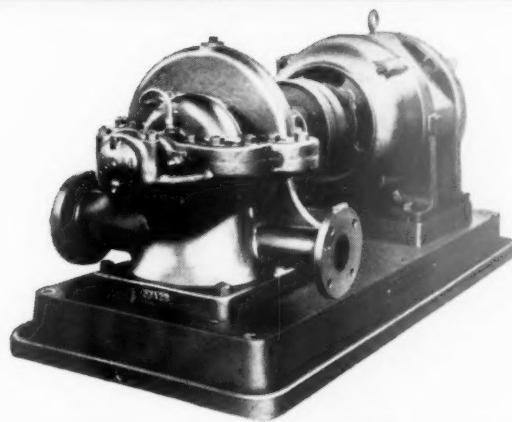
Series BK-16 Relay. Built to minimum tolerances and the most exacting requirements in production quantities for the U. S. Signal Corps.

4 WAYS TO SPEED PRODUCTION AND PROTECT PROFITS



Control Your Power Source

Worried about power shortage? Or about demand charges and peak penalties? Generate your own power, in a corner of your plant, with Fairbanks-Morse Diesels. Designed to operate with minimum fuel and maintenance cost in sustained heavy-duty service, the 2-cycle, slow-speed F-M Diesels keep power costs low in both busy times and slack. They make you independent of what may happen elsewhere.



Stop Power Losses with More Efficient Pumps

Pumps of certain types, even if as good as new, require up to 25% more power than today's improved Fairbanks-Morse models. Don't waste vitally needed power! Let an F-M Pump Engineer tell you whether your pumps are the types which carry such heavy obsolescence penalties that new ones would pay for themselves in as little as a year.



Save Time and Money with Modern Scales

Frequently, engineers and executives are amazed at the time-and money-saving applications which can be made of modern scales. Today, scales count small parts and commodities, weigh while materials are moving, print weight records faster than a man can read and write them, and weigh preset amounts automatically. Let an F-M Scale Engineer recommend profitable applications in your plant.

Write to Fairbanks, Morse & Co., Dept. L68, 600 S. Michigan Ave., Chicago, Ill. Branches and service stations throughout the United States and Canada.



Use Motors That Won't "Let You Down"

There's no motor so capable of standing up to today's production tempo . . . of operating dependably under constant plugging and reversing . . . as the motor with one-piece rotor winding centrifugally cast of SOLID COPPER. To avoid delaying production with motor failures, equip your machines with F-M Motors—the only motors that have Copperspun rotors. F-M Motors are available in a wide range of types and sizes for practically all applications.



FAIRBANKS, MORSE & CO.

Manufacturers of Precision Equipment for 111 Years

When writing Fairbanks, Morse & Co. please mention Purchasing

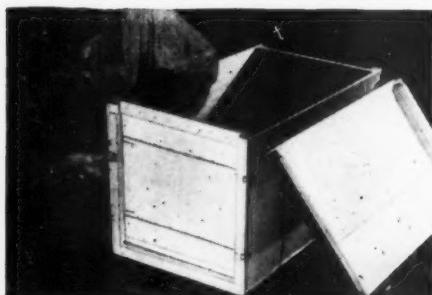
General ALL-BOUNDS make DEFENSE PRODUCTS



MOVE FASTER

Eliminating lost motion . . . saving floor space . . . providing easier, faster handling . . . the General All-Bound Box is helping scores of manufacturers maintain production line speed in their shipping rooms.

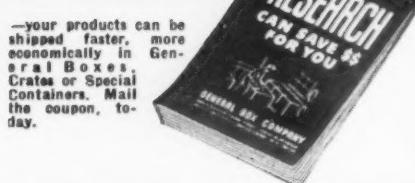
The General All-Bound is shipped flat, yet two-thirds assembled — even inexperienced workmen can complete assembly in record time. No nails are necessary, can be closed and securely sealed simply by bending sturdy wire loops.



FOR ALL TYPES OF PRODUCTS

General All-Bounds are used for nearly all types of products in shipments up to 500 lbs.

THIS FREE BOOK TELLS HOW



GENERAL BOX COMPANY

General Offices: 48 W. Illinois St., Chicago, Ill.
District Offices and Plants: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon, Continental Box Company, Inc.: Houston, Dallas

GENERAL BOX COMPANY
48 W. Illinois St.
Chicago, Illinois
() Send copy of "How Research Can Save \$S for You."
() Have a General Box engineer call.
Name
Address
City
State

M.I.T. and has had many years of engineering and purchasing experience. He is a past president of the Connecticut Association, served on the Executive Committee of the Purchases and Stores Division, Association of American Railroads, and is at the present time a consultant to the Purchase Division of OPM. Following his address, a colored sound film, "Railroadin'," was shown through courtesy of the American Locomotive Co. and the General Electric Co.

CONNECTICUT ANNUAL MEETING

The annual meeting of the Connecticut Purchasing Agents Association was held at the Swan Memorial in Seymour, on November 25th. Speakers were Robert B. Parker, Jr., Associated Press correspondent, "From a War Correspondent's Note Book," and Bernard G. Byrne of Providence, District Vice President.



ST. LOUIS PRIORITY FORUM

The November meeting of the St. Louis Association of Purchasing Agents was held at the York Hotel on the 25th. The program featured a priorities forum and round table discussion led by Lee Bussmann of Bussmann Mfg. Co., Mark Covell of the Union Electric Company of Missouri, William Grossman of A. Leschen & Sons Rope Co., J. E. Nolan of Scullin Steel Co., and Ed Kansteiner of Sligo Iron Store Co.



LONG SERVICE RECORDS

An unusual record of long service in industry was highlighted at a dinner in Cleveland, November 15th, honoring two veteran employees of the Lamson & Sessions Company who had completed fifty years of service with the company. President Roy H. Smith was master of ceremonies, and Board Chairman George S. Case presented medals to William Behrend and Richard F. Vacha, both of

Until It's Over "OVER THERE"!

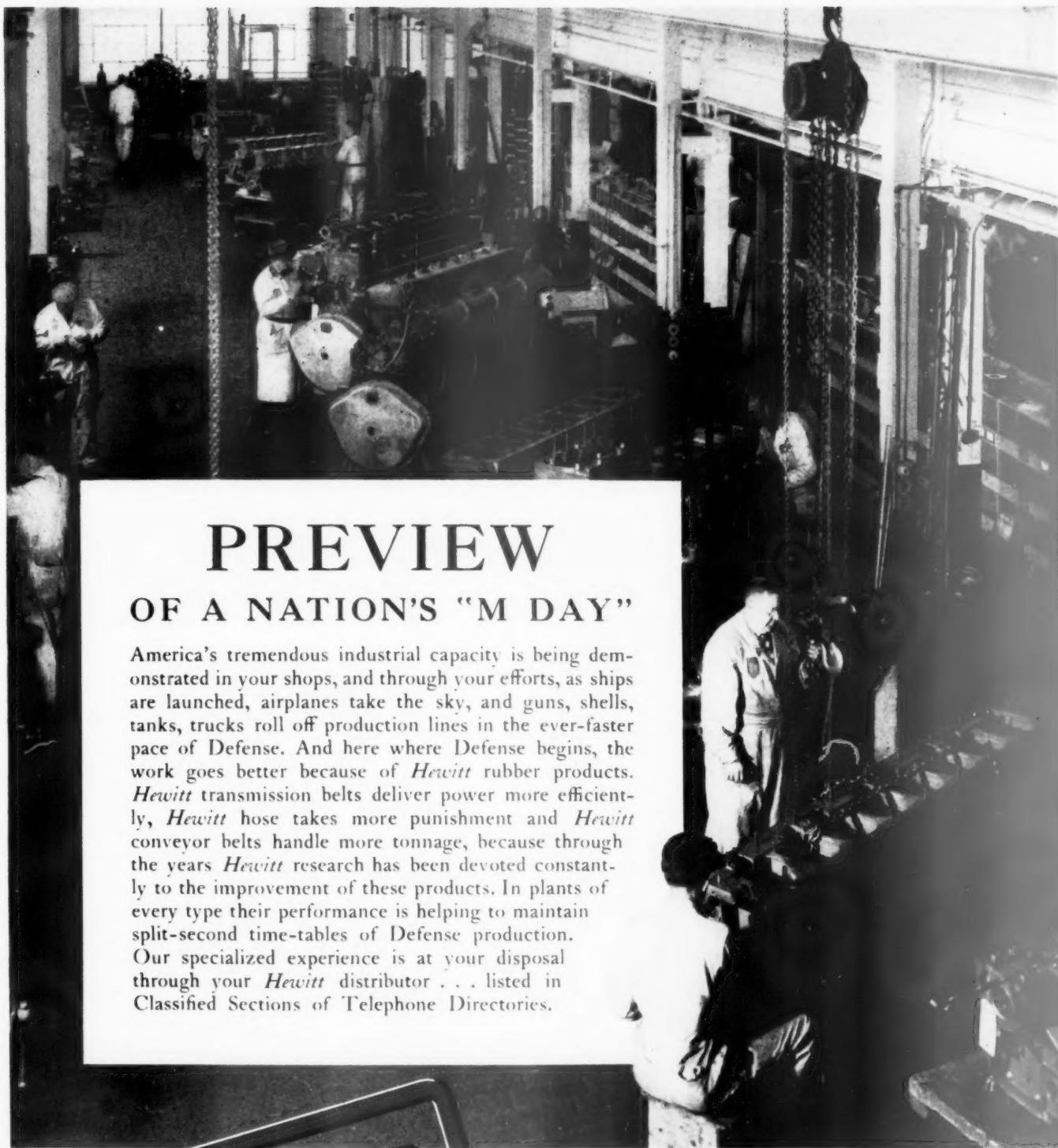
The furnaces at SEYMOUR will continue to turn out their present history-making tonnage—24 hours a day when necessary—until sanity returns and peace reigns again "over there"! In this endeavor, we bespeak the co-operation of all with whom we deal.



SEYMOUR
NICKEL SILVER
PHOSPHOR BRONZE
NICKEL ANODES

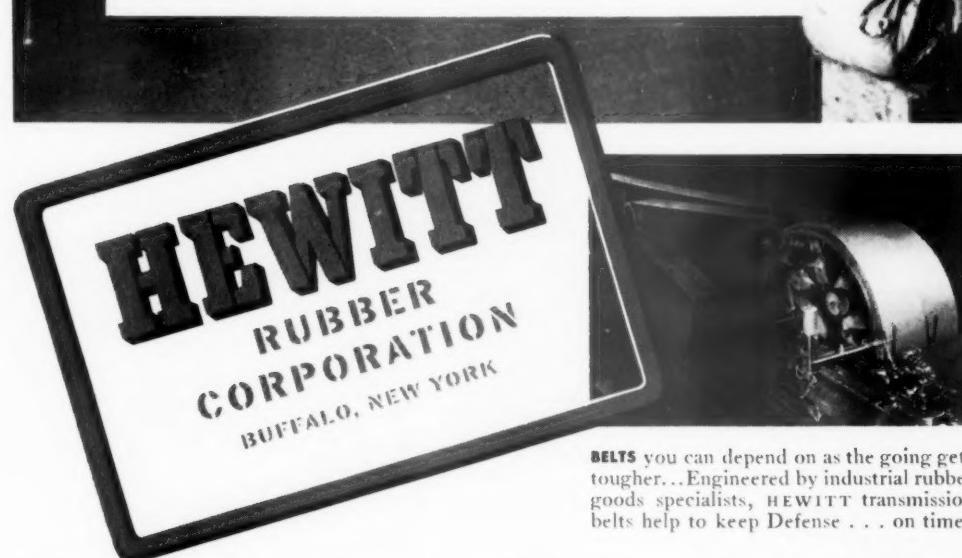


THE SEYMOUR MANUFACTURING COMPANY
Seymour, Conn.



PREVIEW OF A NATION'S "M DAY"

America's tremendous industrial capacity is being demonstrated in your shops, and through your efforts, as ships are launched, airplanes take the sky, and guns, shells, tanks, trucks roll off production lines in the ever-faster pace of Defense. And here where Defense begins, the work goes better because of *Hewitt* rubber products. *Hewitt* transmission belts deliver power more efficiently, *Hewitt* hose takes more punishment and *Hewitt* conveyor belts handle more tonnage, because through the years *Hewitt* research has been devoted constantly to the improvement of these products. In plants of every type their performance is helping to maintain split-second time-tables of Defense production. Our specialized experience is at your disposal through your *Hewitt* distributor . . . listed in Classified Sections of Telephone Directories.



BELTS you can depend on as the going gets tougher...Engineered by industrial rubber goods specialists, **HEWITT** transmission belts help to keep Defense . . . on time!



HOSE the U. S. Army Air Corps depends on to cut aircraft "ground time" . . . **HEWITT** developed all-synthetic refueling hose saves many vital minutes.

HOSE • CONVEYOR AND TRANSMISSION BELTS • PACKING

When writing Hewitt Rubber Corporation please mention Purchasing

* UNITED WE STAND *

Uncle Sam and Defense Industries are calling for unprecedented quantities of STAR Hack Saw Blades. New production records have enabled us to "Arm for Defense", and serve with reasonable promptness Civilian requirements.

It's vital that we help you and you help us during this National Emergency. When ordering adhere to our new simplified National Emergency List. (This speeds up and increases production). Supply us whenever possible with Defense or Priority ratings.

By being united we stand ready to best serve our Country's Defense.

STAR HACK SAW BLADES,
formerly packed in famous modern metal
Clemson Boxes, are now packed in cardboard defense boxes.



CLEMSON BROS., INC.
Middletown, N. Y.

whom entered the company's employ in 1891. Twenty-seven employees with 25-year service records were also cited. Present at the dinner were 11 employees with 50-year records, 9 who had retired after 50 years of service, more than 100 in the 25 to 49 year group, and 275 in the 15 to 25 year bracket.

MANUFACTURERS FAVOR SOUND PRICE CONTROL

In a statement based upon his testimony given before the House Banking and Currency Committee as a representative of the N.A.M.C., C. Donald Dallas, President of Revere Copper and Brass Incorporated, stated that manufacturers are not opposed to price regulations.

Mr. Dallas pointed out that voluntary price control, within the industry, was responsible for keeping the price of copper, an essential war material on which there is a very definite shortage, at 12c a pound, the same price at which it sold a year ago. Without such control, the metal might well now be selling for 35c a pound, he maintained. During the last war it reached a high of 37c a pound. Similarly, voluntary price control has been in effect on most of the principal products of industry for the past year.

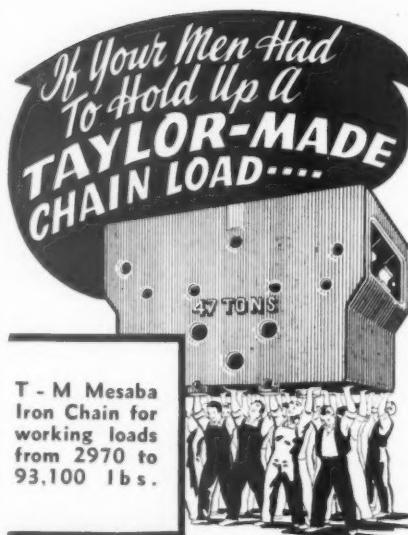
Mr. Dallas said: "As manufacturers, we are wholeheartedly in favor of price controls which we regard as a necessity during the present emergency. All of us have seen the crushing evils of inflation after the last war and no one wants those evils repeated.

"What we need however, and what we are pleading for, is a thought-out practical system of price controls which is, in the first place, recognized as a purely temporary emergency measure; and which in the second place, takes cognizance of the various factors that go to make up prices, such as taxes, wages, credit, rents, interest rates, and farm prices. Without recognition of all these factors, any price control system must fail, possibly disastrously.

"You cannot just go out and tell a man to sell an article for a dollar when the cost of wages and material in the article are a dollar and ten cents, or even a dollar and one cent. We must be realistic if we are to have successful price controls. It is most unrealistic to attempt to control only 10% of all prices and neglect entirely the remaining 90%, when the 90% enters into the cost of the 10%.

"The victim of an inept price control system would soon find himself bankrupt and without any business at all. This type of price control would not, as some people seem to think, help the country. Our country cannot live or defend itself without business any more than a man can live without nourishment. And business simply cannot exist under such conditions.

"If we expect to see the problem of inflation a simple one with a single, simple answer such as arbitrary price freezing, we are going to be dis-



T - M Mesaba Iron Chain for working loads from 2970 to 93,100 lbs.

... you would get some idea of the mighty strength inbuilt by T-M materials, design, rugged construction. T-M Mesaba Chain shown at left has a reputation as highest quality among wrought iron chains. A MONEY-SAVER. One of a complete line of

Taylor-Made CHAINS

T-M Mesaba has unusual tensile strength, shock resistance, ductility for hardest use. Made from special pure checkerboard iron, for Slings, Cranes, Steam Shovels, Steering Gear, many other uses.

There's a Taylor-Made Chain exactly fitted to every use, load or pull. Write for full data on metal, alloys, sizes, weights, grades.

Taylor-Made Slings, Chains for all purposes and Fittings are shown in Taylor Literature. Send for catalog.

L L V P
S. G. TAYLOR CHAIN CO.
HAMMOND INDIANA



10,400 Guns for Merchant Ships from Steel Conserved by Preformed Wire Rope

★ It pays to use preformed wire rope. Being preformed this "rope" lasts longer—cuts the number of machine shutdowns—steadies production. It is easier, faster, safer to handle. It saves both time and money.

★ But preformed wire rope does far more than that. By lasting longer, it conserves steel, and steel is a vital necessity to America today. Anything that helps conserve steel for America is of itself a vital necessity.

★ The steel conserved this year by the longer service of preformed wire rope would be enough to build more than 10,400 3-inch caliber guns for merchant ships.

★ Preformed wire rope is an essential to industry, a necessity for the Nation.

PREFORMED WIRE ROPE

Ask Your Own Wire Rope Manufacturer or Supplier



MODERNIZE WITH DoAll Band Files



- ★ Out with slow hand filing!
DoAlls are 8 times as fast.
- ★ Away with jig filing!
DoAlls are 5 times as fast.

That's absolutely true—and they last twice as long as ordinary files because there is no back stroking. A rigid, continuous file flows smoothly and evenly in one direction only, turning out finished jobs with amazing ease and speed.

Don't wait! Keep up with today's fast moving pace. Investigate DoAll Band Files right now.



37
FILES
LIKE
THIS
ON A
STEEL
TAPE
MAKE
ONE
DoAll
FILE
BAND

MANY SIZES and STYLES

DoAlls come in 23 different styles, cuts and widths, to take care of every kind of filing job, from hardest high carbon steel to brass, plastics, etc.

Send for literature today.

THE DO ALL COMPANY

1214 Thacker St., Des Plaines, Ill.

Associated with Continental Machines, Inc.,
Minneapolis, Minn.

pointed. Life seldom accommodates itself to wishful thinking.

"You simply cannot fix the price of a product without more or less fixing its cost. That is elementary. In this connection the question of wages naturally plays an important part. Inflationary spirals of wages, for instance, must be prevented. In any short period, higher wages will inevitably mean higher costs and higher prices. If it is legally and morally sound for the Government to put a floor under wages as it did in the Wages and Hours Act when this was in the interest of the working man and the country at large, then it is also legally and morally sound to put a ceiling over wages when this is in the interest of the working man and the country.

"Likewise, if it is legally and morally sound to establish a floor under agricultural prices—as the Government did by establishing the principle of parity—when it is in the interest of the farmer and public to do so, then it is legally and morally sound to put a ceiling over farm prices when it is in the interest of the farmer and public to do so."

OVER 300 FIRMS HELP WESTINGHOUSE FILL DEFENSE ORDERS

To buttress production of its own 26 manufacturing divisions engaged in making more than \$300,000,000 of national defense materials, Westinghouse has increased its "farming out" of defense subcontracts by 20 per cent since April, according to T. I. Phillips, assistant to president.

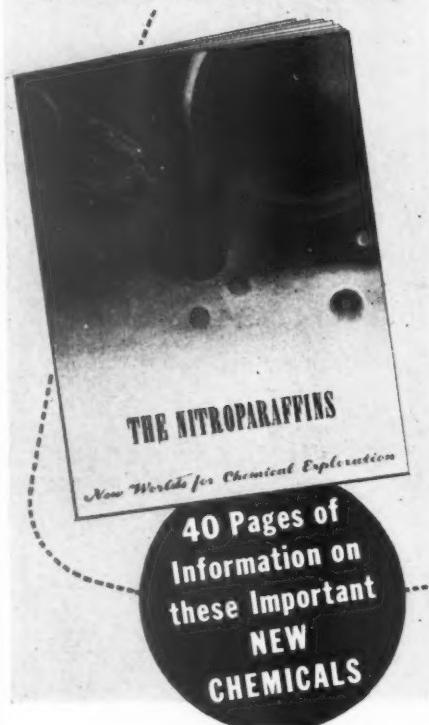
Defense subcontracts are being let at a rate to provide 6,600,000 man-hours of work a year for the employees of more than 300 small manufacturing companies.

This "farming out" work helps to meet commitments on defense production and at the same time spreads employment among these small companies, some of them incapable of bidding on major government contracts because of their limited facilities. More than a year ago the Company let its first subcontracts to meet requirements for screw machine parts and iron castings, and subsequently machine tool work also, when Westinghouse found its own tooling capacity overloaded.

Many types of plants have become Westinghouse subcontractors including a glass factory and an oil well equipment company, both now making turbine generator parts. Some small companies which otherwise would be forced to suspend business because they cannot obtain priority-bound materials for the manufacture of peace-time products depend upon subcontracts to continue operations. One of these was saved from liquidation because Westinghouse subcontracts gave it enough work to satisfy receivers that operations could be continued at a profit.

Because assembly forces can be built up faster than export machinists can be trained, Westinghouse is even "farming out" part making for some of its standard products. Examples of this include several companies in the Pittsburgh district which are machining frames and

New DATA BOOK about the NITROPARAFFINS



Here's up-to-the-minute information on the Nitroparaffins—"the most important advance in chemistry since the development of the coal tar derivatives." Much of the information in this booklet has never been published before.

The Nitroparaffins and their derivatives are now being used in protective coatings, cosmetics, pharmaceuticals, plastics, textiles, and many other fields. This new booklet contains a wealth of valuable ideas for your chemist. Send for your copy today.

Gentlemen:
Please send me a copy of your new booklet,
"The Nitroparaffins."

Name _____

Company _____

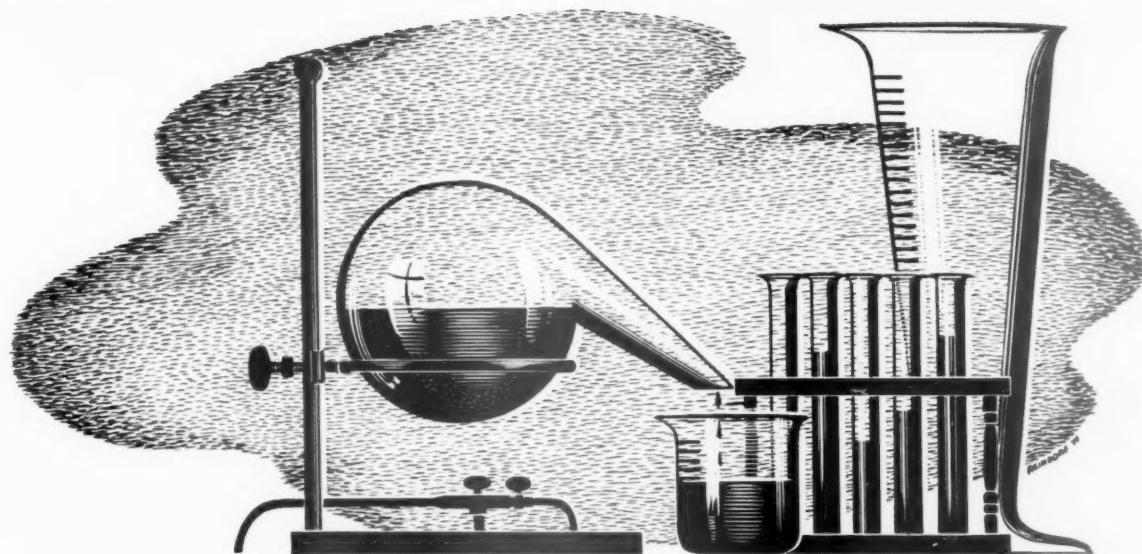
Street _____

City _____

COMMERCIAL SOLVENTS

Corporation

629 CHERRY STREET, TERRE HAUTE, INDIANA



The Showdown on a Much-Abused Word-

Service!

FOR YEARS, service has been our by-word. Today's urgent needs are a challenge which we are geared to accept.

Paper, inks, varnishes, etc. are being made to new specifications. Shortages and priorities have affected supplies of many materials. Equipment is being run at new high speeds, to meet demands for increased production.

Naturally, your adhesive requirements need constant revision . . . and a higher quality of *service* than ever before.

NATIONAL is proud of its ability to come through in this crisis. Our trained service organization is at your command . . . *to relieve you of your adhesive worries.*

NATIONAL ADHESIVES
DIVISION OF
NATIONAL STARCH PRODUCTS INC.

"Even the President can be wrong, Joe!"



PRESIDENT: Right or wrong, I still contend that rope is a comparatively unimportant item in our plant.

PURCHASING AGENT: On a cost basis, yes. But from the human standpoint, it's mighty important, because good rope helps prevent accidents.

PRESIDENT: I'm mighty glad to hear you talk that way, Joe.

PURCHASING AGENT: And good rope heads off rope failures which can mean production failures.

PRESIDENT: I don't mind hearing you talk that way either. But what are you doing about it?

PURCHASING AGENT: I'm buying Plymouth Rope—"the rope you can trust," the world standard!

PRESIDENT: Then you're right and I'm...

PURCHASING AGENT: Skip it, Chief!

Government priorities require the manufacture and sale of an "emergency grade" of rope for certain specified uses. This "50/50 Brand," as made by Plymouth, contains the maximum amount of Manila fiber allowable under the law.

PLYMOUTH ROPE FOR INDUSTRY BINDER TWINE • TYING TWINE

PLYMOUTH CORDAGE COMPANY

North Plymouth, Massachusetts
Welland, Ontario

In these troubled times, business-as-usual is obviously impossible. However, it is possible for us to render service as usual! Frequently, we issue bulletins on OPM regulations as they apply to rope. Free copies of these bulletins may be obtained by writing to "Emergency Service Department, Plymouth Cordage Co., North Plymouth, Massachusetts."

Name.....
Company.....
Address.....

brackets for motors. This releases many expert Westinghouse craftsmen for exacting defense production, and at the same time keeps standard products rolling off assembly lines to meet the increasing needs of other defense manufacturers for such products.

REYNOLDS TO BUILD THIRD ALUMINUM PLANT

Plans are being drawn for the third aluminum plant to be owned and operated by Reynolds Metals Company, according to announcement by R. S. Reynolds, president of the company. The new plant is expected to be located at Listerhill, Alabama, in the Muscle Shoals district, where the Reynolds company already owns and operates an alumina plant and an aluminum plant producing forty million pounds of virgin aluminum a year. The company also operates a rolling mill, producing aluminum sheets at the Listerhill site. The new aluminum plant is expected to increase Reynolds' aluminum production to 160 million pounds a year.

The third aluminum plant, like the other two now in operation, will be entirely owned by the Reynolds Metals Company. The first two plants were financed by government loans that held as security the entire eighteen plants of the Reynolds company operating at the time the first loan was made in 1940.

Company officials would make no predictions as to when the third plant would be in operation, but pointed to the record made at Listerhill in the construction of the first plant, where aluminum was poured within five months and twenty-eight days after ground was broken at the site. An even better record for speed was attained in the building of the company's second aluminum plant at Longview, Washington.

BOLTS FOR DEFENSE - NOW!



When you need bolts, nuts, screws, washers, rivets and special fastenings... made of NON-FERROUS AND STAINLESS METALS... come to Harper. This organization offers to defense and other essential industries —

4320 STOCK ITEMS

... and special machinery to produce a host of "hard-to-make" and "out-of-the-ordinary" fastenings. Write for new 1942 Catalog — 4 colors, 80 pages, numerous reference tables.

THE H. M. HARPER COMPANY
2606 Fletcher St.,
Chicago

HARPER
Chicago



SMALL...
but Mighty Important

A battle was lost for want of a horseshoe nail. Are you losing sales and customers because you don't use **AMESACKS**?

PARTS BAGS

Cotton Bags with drawstrings. Small parts go into bag, which is tied securely to product. No lost parts, annoyance or delay.



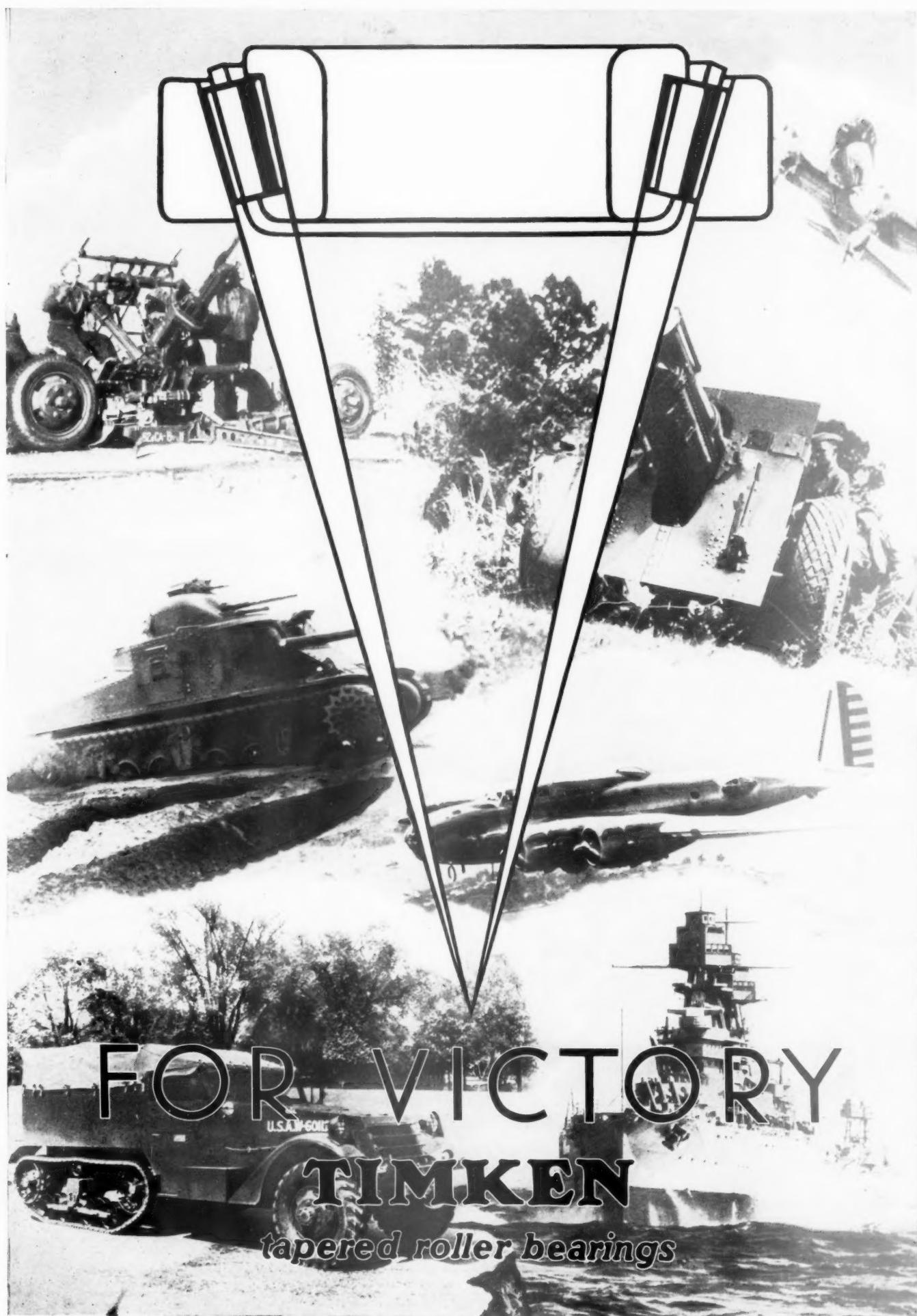
PARCEL POST BAGS

Cotton Bags with drawstrings and address tags. Save up to 90% packing time and up to 50% postage. Handy, efficient, economical.

Write for Samples and Prices

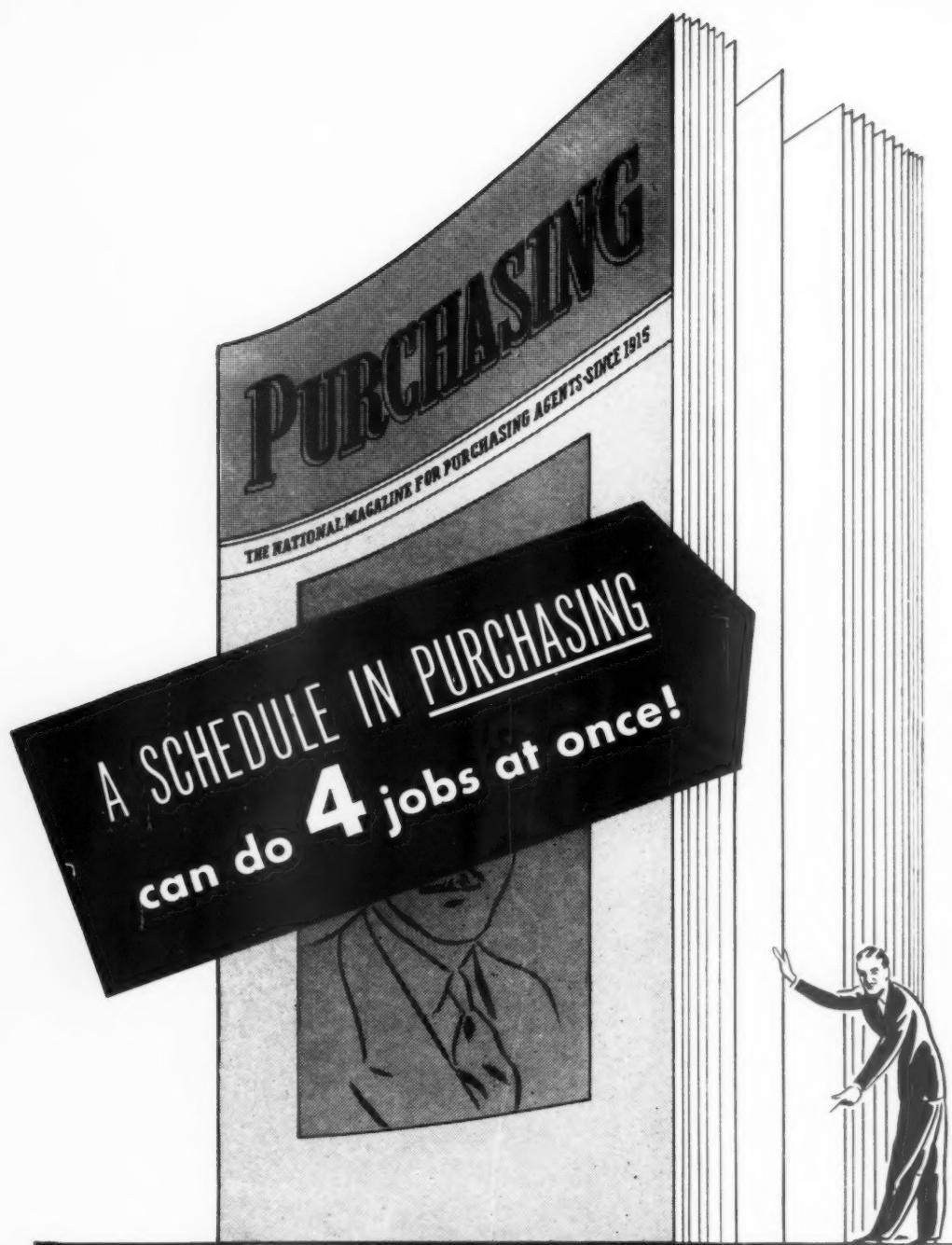
AMES BAG MACHINE CO.

1991 East 66th St. • Cleveland, Ohio



FOR VICTORY
TIMKEN
tapered roller bearings

When writing The Timken Roller Bearing Co. please mention Purchasing



In selling to industry, does your advertising do these four basic jobs? 1. Help get your product on a manufacturer's "accepted" list. 2. Help get your product specified once it's on the "accepted" list. 3. Pave the way for and assist your salesmen in getting through to the proper departments. 4. Help your product to be passed by the Purchasing Executive when requisitioned by operating departments.

You can do all four at once with a schedule aimed at today's Purchasing Executive! Often a highly trained engineer or production man, he not only coordinates all of industry's buying, but works closely with engineering, research and pro-

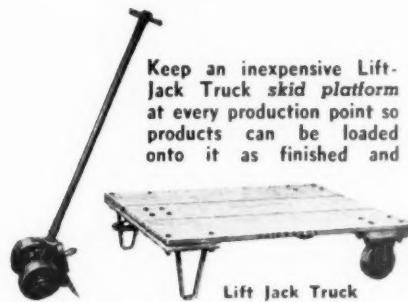
duction departments as well. The economical way to reach him - PURCHASING, his national magazine - gives you complete coverage. Write for facts! PURCHASING, 205 E. 42nd St., New York City; 333 No. Mich. Ave., Chicago; Leader Bldg., Cleveland.

PURCHASING *The National Magazine for Purchasing Executives*

★ ★ ★ ★ A CONOVER-MAST PUBLICATION ★ ★ ★

When writing advertisers please mention Purchasing

Speed Up Production



This eliminates the expense, labor and delay of piling up products at point of origin and later loading them onto trucks. Saves one or more handling.

Fairbanks Lift-Jack Truck is low priced, yet has the advantages of high-priced types. Write for booklet J-1.

THE FAIRBANKS COMPANY



22 EAST 4th ST., NEW YORK, N. Y.
Boston, Mass., Pittsburgh, Pa.
Distributors in Principal Cities
Factories: Binghamton, N. Y., Rome, Ga.

Fairbanks

"Now
WE MARK MATERIALS
TWICE AS FAST!"

That's what a prominent contractor tells us—and there are hundreds like him. They use Paintcil—paint in stick form—handy to carry as a pencil.

Abolishes old paint brush-and-bucket method. Any inexperienced person can use. White and many colors.

Write or wire for samples.

Insist on this genuine paint in stick form. Specify "Paintcil."

PAINTCIL

HELMER-STALEY, INC.
327 West Huron St., Chicago, Ill.

OBITUARY

Frank J. Finnegan, formerly Purchasing Agent for the R. & G. Corset Co., South Norwalk, Conn., and more recently associated with the firm of J. M. Layton & Co., Inc., died at his home in that city, November 1st.

Robert A. Bachur, 52, Purchasing Agent for the George A. Fuller Co., New York, and for the past year assigned as Purchasing Agent for work at the United States Naval Base at Quonset, R. I., died at his home in Edgewood, R. I., November 2nd.

James J. Heatherington, 65, for many years Purchasing Agent for the Yonkers (N. Y.) Works of the Otis Elevator Co., died at St. John's Riverside Hospital in that city October 27th, after a long illness. He retired from active business in March, after 39 years of service with the company.

Joseph A. Barkley, 45, Purchasing Agent of the Pyrites Co., Wilmington, Del., since 1921, died when his new monoplane crashed at Lexington, Va., October 26th. Mr. Barkley was a World War pilot, and held a private pilot's license, with several hundred flying hours experience.

Howard F. Roszelle, 44, Purchasing Agent of the Fuller Brush Co., Hartford, Conn., died in New Haven, November 12th. He suffered a heart attack while attending a meeting of the Manufacturers' Association of Connecticut. Mr. Roszelle joined the company in 1914, and was the third oldest employee in point of service. He became Assistant Purchasing Agent in 1922, subsequently advancing to the head of the department. He was widely known among purchasing men, being active in association affairs and a regular attendant at national conventions. He served as President of the Connecticut Association in 1938, and as National Director the following year.

MULTIPLEX DISPLAY FIXTURE FOR SALE

A #63 Floor type revolving Multiplex Display Fixture with a ten wing capacity, complete with 10 wings 24" wide by 36" high, 1" beveled moulding frames, fillers of thumbtack board covered with brown burlap.

Entire fixture finished in crinkle antique bronze.

Complete with shipping case. Ideal for display of advertising material, for convention exhibits or in office maps, charts. In excellent condition.

Box No. 926
PURCHASING

205 E. 42 St. New York, N. Y.

OUR PART AND YOURS



The Defense requirements for VICTOR Hack Saw Blades is enormous. We are doing our part by serving these users first. Expanded production enables us to meet this demand along with Civilian needs with reasonable promptness.

During this Emergency Co-operation is vital. Order sizes and specification from the simplified National Emergency List. (This increases and speeds up production). Whenever possible identify your orders with Defense or Priority ratings.

"Our Part and Yours," is our Country's call to Arm for Defense.

VICTOR HACK SAW BLADES,
formerly packed in modern metal boxes
now come packed in the new cardboard
Defense boxes.

VICTOR SAW WORKS, INC.
MIDDLETOWN, N. Y.

**"On the Spot"
OR "FROM 'WAY BACK"**

**FELT
keeps
lubricants
ON TAP!**



The "blush" that means ball bearing insurance!

"On the spot"—a felt washer saturated with oil and sealed within the bearing assembly at the friction point provides certain insurance against bearing failure due to friction. At the slightest pressure, the lubricant bleeds to the surface.

"From 'way back"—felt wicking connecting an oil reservoir with a bearing point maintains a constant supply of lubricant at the friction point. The close-knit structure of the wool fibres in denser felts provides a comparatively rapid capillary action. Long fibered felts are used to prevent clogging. To eliminate corrosion of metal or fiber deterioration at

high operating temperatures, specify a neutralized felt.

Does your product enjoy the full advantages of felt's inherent qualities? Perhaps some troublesome operating detail can be eliminated by the use of a felt part. Or some present use of felt in another field may hold the solution to your particular problem. Your American Felt representative can give you the facts on felt, how it is being used, what new services it's performing, the full story of its versatility. Call him in today, or write for Data sheets to assist you in setting up your blue-prints. We like to help engineers, chemists and spec. men.

**American Felt
Company**



General Offices: Glenville, Conn.

Plants at Franklin, Mass., Glenville, Conn., Newburgh, N. Y., Detroit, Mich.

PRODUCERS OF FINEST QUALITY PARTS FOR OIL RETAINERS, GREASE RETAINERS, WICKS, DUST EXCLUDERS, GASKETS, INSULATING FELTS, CHANNEL FELTS, UPHOLSTERY RISER STRIPS, BODY SILENCING PARTS, DOOR MECHANISM GASKETS AND BODY POLISHING WHEELS

HOW RUST CRAFT BUYS

(Continued from page 48)

the business, and with the spirit of this organization in particular, that the caller is invited to sign a "Visitors' Register" instead of making out a formal appointment slip. Incidentally, the successful experience of this company, and its high standing in the industry, are ample evidence that this attitude and this type of reception constitute an excellent business policy.

Present emergency conditions in industry have naturally been the subject of serious consideration in formulating policies to meet the special problems of the times. But though greeting cards can scarcely be classed as essential products for defense, and though the paper market which constitutes one of the major items of procurement is one of those in which difficulties of supply are threatened, there has been no disposition in this company to hoard supplies or to resort to any species of panicky buying. Its vendor relationships are on a sound and cordial basis. The situation has been frankly discussed with suppliers, the requirements are known, and the Rust Craft purchasing department expects to carry on its procurement program and to get deliveries by normal means—a decision that is more in keeping with the national interest than are some of the instances reported from direct defense industries.

There have been some adjustments to make, of course. Some of the printing pigments are getting harder to obtain, but skilled talent in the creative and graphic arts can adapt the work to such conditions. There is a necessity of conserving some of the

**MEDART
STEEL LOCKERS
STEEL SHELVING**

In times of stress as in times of peace, Medart Steel Shelving and Medart Steel Employee Lockers solve the storage problems of industry. Special "high-speed" engineering service available.

FRED MEDART MANUFACTURING CO.

3556 DE KALB ST. • ST. LOUIS, MO.
Sales Engineers in All Principal Cities • Dealers Everywhere

chemicals in the engraving processes, but technical skill will surmount that difficulty too.

These evidences of cooperation, plus the tremendous contribution of this industry to the national morale and its direct aid in such specific national programs as the Defense Stamp sale, may be counted on to insure sympathetic consideration by government if conditions should get worse instead of better for this non-defense industry. And what could be more eloquent of faith and confidence in the future than the fact that the Rust Craft organization is even now working on its cheery greetings and messages of peace and good will for Christmas 1942!

STREAMLINED SYSTEM FOR PAINT DISTRIBUTION

(Continued from page 65)

driven internal gear pumps keep the liquids circulating. Less expensive than the others, this type of unit is satisfactory for short runs of pipe which, as in this case, have only one or two outlets.

Located in each pipe line system just beyond the pump is a mechanical filter. The circulation cycle is from the tank to the pump, through the filters, out into



Specialized Safeguards for workers handling Acids and Chemicals

Wherever acids and chemicals are handled, serious danger exists. To meet these hazards, Pulmosan has assembled a group of specially designed safeguards including Aprons, Gloves, Sleeves, Hoods, Goggles, Fume and Dust Respirators, Eye-shields, Carboy Truck and Tilter, Carboy Siphon, Acidproof Pails and Dippers, Skin Creams, etc. Each item is thoroughly tested and provides dependable protection. Let us know your requirements.



Pulmosan Carboy Tilter shown

Write for Leaflet
"SAFE HANDLING OF
ACIDS AND CHEMICALS"
showing complete line of
protective equipment.

PULMOSAN SAFETY EQUIP. CORP.

Dept. P. 176 Johnson St., Brooklyn, N. Y.

When writing advertisers please mention Purchasing

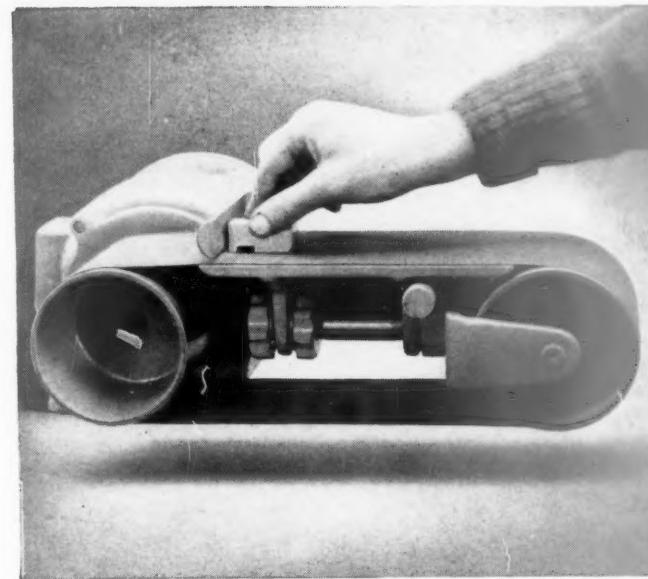


Illustration courtesy Production Machine Co.

What Coated Abrasive Has More Keen-edged Grains? **CLOVER, of Course!**

When your skilled mechanic uses a piece of Clover Coated Abrasive, he can tell *in a flash* that he is getting sanding at its best. His trained hands quickly detect the super-cutting power in Clover's husky, perfectly graded, keen-edged grains. Your mechanic's job is done with speed and precision when he uses a Clover Coated Abrasive.

**TELL US YOUR TOUGHEST COATED ABRASIVE PROBLEM . . .
WE CAN HELP YOU!**

Clover Abrasive Advisory Service is ready to help you untangle your sanding problems and make recommendations that will put your production on an economical basis. Write DEPT. K, for details. Ask us also for informative Abrasive Manual, and for our free trial offer.

CLOVER MFG. CO., NORWALK, CONNECTICUT

**ASK, ALSO, ABOUT CLOVER GRINDING AND LAPING COMPOUND
—FAMOUS FOR 38 YEARS**

In the 38 years Clover Compound has been the first choice of expert machinists for precision lapping, over 40 million cans have been used,—each can demonstrating these long-famous Clover qualities • Perfectly graded, super-sharp, diamond-hard Silicon Carbide grain • Eight grades from microscopic fine to very coarse • Special heat-resisting petroleum hard oil binder • Withstands friction temperatures • Maintains uniform consistency and grain suspension • Fast-cutting • Cool-cutting • Does not burn work.

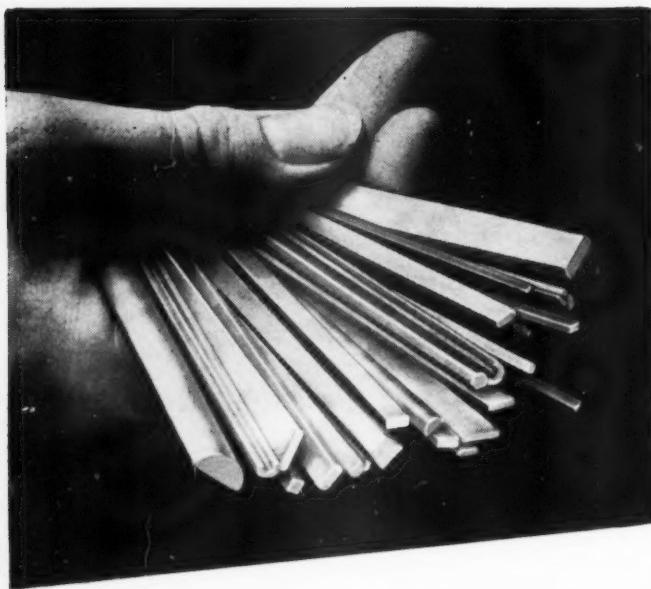


The trade mark that  certifies abrasive quality

CLOVER Coated Abrasives

Easily Identified by Color-Striping
and the Famous Clover Trade Mark

QUALITY ABRASIVES SINCE 1903



No compromise with old-time quality at PAGE

The use of Steel in production for defense is bound to be reflected in the supplies available for other needs.

But there is a steady flow of wire from the PAGE Mills—wire that is fully up to the PAGE standards—and just as rapidly as it passes PAGE inspection, production available for industrial use is shipped. We are building no inventory.

SHAPED WIRE—In such shapes as triangle, keystone, oval, hexagon, octagon, channel, square, half-round, etc. Widths up to $\frac{3}{8}$ ". Areas up to .250 square inches.

★ ★ ★

Wire is the Business of PAGE—Spring Wire. Bond Wire. Telephone Wire. Wire and rod of the analysis, size and shape to meet exacting requirements.

★ ★ ★

Bare and Coated Welding Wire—for overhead, vertical or horizontal work—Iron, Steel and all analyses of Stainless Steel. Distributors in your territory.

Whenever it's a question of wire, remember it's

PAGE for WIRE

PAGE STEEL & WIRE DIVISION

MONESSEN • PENNSYLVANIA



AMERICAN CHAIN & CABLE COMPANY, Inc.

the line and return to the tank. Consequently the paint is continuously filtered as it is circulated and before it enters a distribution line.

To maintain uniform spraying pressure, each outlet in each pipe line is provided with a fluid regulator to reduce the line pressure to the desired spraying pressure. Each regulator has a removable key adjustment and a pressure gauge for indicating the selected spraying pressure. Only the supervisor is provided with a key to operate the regulators. This centers in him the responsibility for always using the correct spraying pressure.

The advantages derived from establishing the paint circulating system in conjunction with the centralized mixing and storage facilities are already returning handsome dividends on the investment.

There is no longer any chance of dilution of the paint or of dirt getting into it since it is now delivered to the spray guns exactly as mixed. With each outlet provided with an individual pressure control, it is possible to obtain and maintain a uniform spraying pressure which is also the correct pressure for the particular application of enamel or lacquer used. Regardless of the location in the plant, the paint is now sprayed under the same conditions of pressure, viscosity, and specific gravity. This is particularly important where parts finished on different production lines are subsequently expected to match identically as to color in final assembly. Finally, due to the large storage facilities now available and the ability to maintain a uniform temperature of 78 degrees Fahrenheit the year-around, larger quantities of the paint materials can be purchased at one time, and the last step provided in insuring uniformity of color.



WRITE
FOR
CATALOG
CUT



A $\frac{3}{4}$ " cut on annealed bolt is easily within the capacity of large standard Porter Clipper — cuts quickly and keeps on making cut after cut for a long, long time. Special heat-treated cutting edges, minimum friction loss, maximum power increase — all combine in a fine precision tool. Complete line of models and sizes to cut rods, bolts, strap, wire, stranded cable, etc. — special jaws for cutting hard steel or hot work. Special tools designed for crimping, riveting, etc.

Note: we are using every available machine and every available man, twenty-four hours a day, to meet Government requirements, and especially to meet our jobbers' needs with the earliest possible shipments.

H. K. PORTER, INC., Everett, Mass.

PORTER BOLT CLIPPERS

The Handwriting on the Wall

(Continued from page 41)

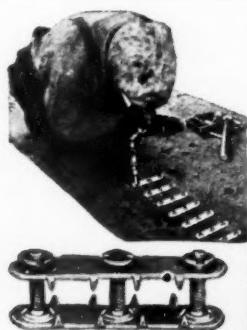
the smallest Jupiterian moon, (moons may be entirely out of the market because the government has tabooed them for civilian use) and that same guy will have the whole story for you, down to the tiniest lunarian gas bubble. It may be a hundred percent green cheese, so what?

The thing that distinguishes the first class man, even a Purchasing Agent, from the multitude of able mediocrities, is vision. Always you find him running way out ahead of the pack, and keeping track of all developments that may affect his line of business vitally, often without notice. If a process is getting out of date, and the boss is so used to it that he can't sense the coming change—bosses do get that way—the Purchasing Agent, with a more detached point of view, and piecing two and two together so they make neither more nor less than four, has a chance to show what Purchasing Agents are good for.

"Saving money" isn't necessarily the prime function of the Purchasing Agent. It is as elementary as breathing. Every buyer is supposed to know enough not to get nicked in a trade; practice, common sense and purchasing power take care of most of that. It's so elementary that sometimes the assistants put over smarter minor deals than the boss would stop to think about. But—

What is the market going to do tomorrow, Christmas, and next Fourth-of-July?

Is the chief engineer cock-eyed when he tells the



• FLEXCO HD RIP PLATES are used in repairing rips and patching conveyor belts. The wide space between outer bolts gives the fastener a long grip on the edges of the rip, while the center bolt prevents the fasteners from bulging.

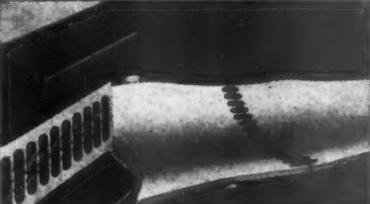


• FLEXCO HD BELT FASTENERS make a strong, tight butt joint with long life. Recessed plates embed in belt, compress belt ends and prevent ply separation. Six sizes in steel and alloys.

FLEXIBLE STEEL LACING COMPANY
4697 Lexington St., Chicago

Keep your conveyor belts going with

FLEXCO
HD BELT FASTENERS



• Avoid shutdowns and lengthen the life of your conveyor belts and bucket elevator belts by using Flexco HD belt fasteners and rip plates. Thousands of companies have stepped up the performance of conveyor lines and cut costs by using Flexco methods.

Bulletin F-100 shows exactly how to make tight butt joints in conveyor belts with Flexco HD Belt Fasteners. Also illustrates step by step the latest practices in repairing rips and putting in patches.



Write for your copy

FLEXCO **HD BELT FASTENERS**
Sold by supply houses everywhere



Efficient and economical plant operation is vital to attain the unprecedented production levels demanded by the National Defense program.

The dependability and long life built into every GARLOCK quality product today, as always, contributes to efficient plant operation by reducing production time losses due to shut-downs for frequent replacement of packings and gaskets.

THE GARLOCK PACKING CO.
PALMYRA, N. Y.

In Canada: The Garlock Packing Co. of Canada Ltd., Montreal, Que.



TO ANSWER THE CALL OF Defense INDUSTRIES



FOR Custom Made PAPER PRODUCTS & PROCESSES

It is our desire to offer any and every facility of this company to the defense program. With equipment and personnel used to attacking a wide variety of coating and adhesive problems, it is our feeling that, while none of our present products may have any greater application than uses we know of today, there may be need for special and unusual coatings, binders or adhesives on either paper or cloth and it is in these needs that we feel we could be of service.

Our special activities in recent years have included such diverse developments as adhesives for sticking to metals of various surfaces, lacquers and plastics; lacquer films for a wide variety of uses; lamination and lacquering of aluminum foils; decalcomania paper for revenue stamps. We'd like to work out time—money—or material-saving processes for you. Just tell us your problem—and we'll be on the job!

MCLAURIN-JONES PRODUCTS include

GUMMED MATERIALS (i.e., label and Kraft papers; sealing, stay, veneer, and cloth tapes; holland, Sisaltape, etc.). COATED MATERIALS (i.e., casein coated, decalcomania, scientific chart and transfer papers, photo-mounting cloth and tissue); LACQUERED MATERIALS (pyroxylin coatings, photographic strip film, chart paper); LAMINATED MATERIALS, IMPREGNATING.

MANUFACTURERS OF



MCLAURIN-JONES COMPANY

MILLS: BROOKFIELD & WARE, MASS.

boss that there's only one kind of a machine will do the job?

Is there a gradual shift in the trend of supply and demand that may cause a whole battery of trusted machines to be just so much junk a year or two from now?

What are competitors buying, and why?

Is there a war in the offing, what is it going to do to your industry and all others? And will it leave the company money enough so they can afford a Purchasing Agent?

There are a thousand questions that a regular guy, pitchforked by fate into a purchasing job, must learn to answer. And the important ones he will find out about only by scouting ahead through the commercial woods so that the company's industrial march isn't sniped to a standstill by enemies ambushed among the trees.

So, the Vice-President in charge of Purchases, and the plain garden variety of Purchasing Agent, need to keep their feet warm, and their heads cool, and their eyes skinned for possible needs and developments, even far-off ones, that may make the industrial policy of John Company spin around on its heels and head into the wind on another tack.

Acquaintance, friendship, wide personal contacts, an inquisitive and retentive mind, a liberally scribbled notebook, and the disposition of a Daniel Boone to see what is on the other side of the hills—all these go into the making of a Purchasing Agent. To say nothing of a carefully cultivated expense account.

The handwriting is always there on the wall for him who can learn to read it.

LEE - BUILT SPRINGS

— *always dependable*



THE supplier needs a thousand eyes
to foresee all customer demands—
the buyer needs but one, to spot a
supplier having those thousand eyes.

Ask About SCIENTECH Spring Service



LEE SPRING CO., Inc.

30 MAIN STREET

BROOKLYN, N. Y.

PAPER PRODUCTION AT PEAK

● Paper production in the fourth quarter of 1941 has attained a rate of 110% of estimated six-day capacity, and the indications are that domestic production on all grades excepting newsprint, building papers and paperboard, will reach 1,900,000 tons during the quarter. This is an advance of 400,000 over production during the first quarter of the year, and would bring total production for 1941 up to approximately 7,000,000 tons. This total would be sufficient, according to trade observers, to meet the actual demand for such papers for the year, though there would still be a substantial backlog of unfilled orders. Indications, therefore, are for continued high rates of production for some weeks to come, followed by a decline. The industry faces some obstacles in the form of difficulties in procuring repair parts for machinery, stringency in the supply of basic chemicals used in its operations (including a further limitation on chlorine) and possibly some transportation delays after the first of the year.

* * *

PRIORITY CHARTS ARE STILL AVAILABLE

● The wall chart of defense priorities, allocations and prices, distributed with the October issue of PURCHASING, has been brought up to date in a revised edition, and additional copies are available at 25 cents each, cash with order. More than 85,000 of these charts have been distributed to date and are doing useful service in purchasing, production and management offices.

Ask Anyone in Industry!

**A NATION-WIDE ORGANIZATION
GEARED FOR
PROMPT, DEPENDABLE SERVICE!**

● WHEN you specify Alemite Lubrication Equipment or Alemite Lubricants on a purchase order, you usually avoid explanations. Everybody who is concerned with the operation or maintenance of machinery knows the reputation and dependability of Alemite products and Alemite service.

Alemite Lubrication Systems are standard equipment on products of most leading machinery manufacturers today. Profit by their experience and specify Alemite when you buy grease guns, fittings, and lubricants!



ALEMITE
REG. U.S. PAT. OFF.
Industrial LUBRICATION

1845 Diversey Parkway, Chicago, Illinois • Belleville, Ontario

When writing advertisers please mention Purchasing



CHICAGO MOUNTED WHEELS

Round and round they go—millions of them—doing every conceivable kind of grinding and polishing job in machine, pattern and die shops, tool rooms, defense plants, foundries, etc.

Designed for rapid, smoother work wherever high-speed portable grinders are used — these superior wheels of V-T Super Bond give 150% to 300% longer service, according to actual tests.



Chicago Mounted Wheels come in a wide variety of shapes, grains, grades and sizes.

TRY ONE FREE

If you've never used Chicago Mounted Wheels, you might like to try a working sample. Write us the style grinder you use and size wheel desired. You'll be amazed at its performance, stamina and the way it holds its shape.

NEW CATALOG

Just off the press — the most comprehensive mounted wheel catalog ever published. Shows the complete line of Chicago Mounted Wheels with detailed instructions for their use. Send for copy today.

CHICAGO WHEEL & MFG. CO.

Quality Grinders and Wheels for 40 Years

118 S. Aberdeen St.

Chicago, Ill.

© 1941 C. W. & M. Co.

REDUCE COSTS

with
POWERS
Automatic
CONTROL

Wherever the right Temperature is important in your plant use a Powers regulator. We make many different types of control for processes shown below as well as for Quench and Tempering Baths—Bake Ovens and Dryers, etc. Tell us what you wish to control. Let us recommend the type of regulator that will give the results you want. THE POWERS REGULATOR CO., 2792 Greenview Avenue, Chicago. Offices in 47 Cities—See Your Phone Book.

WRITE FOR CIRCULAR 2515

FOR

- PLATING MACHINES
- DEGREASERS
- METAL PARTS WASHERS
- BONDERIZER TANKS

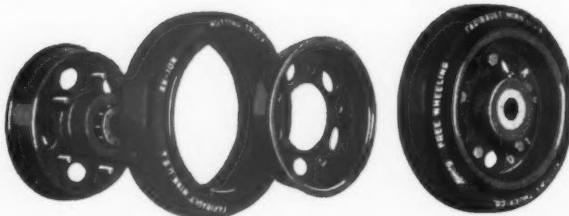
POWERS TEMPERATURE CONTROL

INDUSTRIAL AWARDS IN PLASTICS COMPETITION

• Top award in the Industrial Classification of the Sixth Annual Modern Plastics Competition, went to the Oliver United Filter Corp., Oakland, Cal., for their acid pump impeller and filter drum segment. The pump impeller, molded of Durez plastics and chemical materials, has achieved higher pumping efficiency, longer life, and a weight reduction of approximately 75% through the use of plastic materials. The uniformity of pieces made possible through plastic molding also eliminated the need of balancing and machining, thus effecting a considerable labor and cost saving. The filter drum segment, of Bakelite materials, is assured of longer life because of corrosion resistance, reduction of cost through elimination of machine work, and considerable saving in weight. The uniformity of the segments guarantees the intended open area, and results in better filter efficiency.

Another industrial prize winner is the Wheat Rechargeable Hearing Aid Battery, a light, compact unit perfected by the judicious use of plastics. It gives the user the benefit of a liquid type battery without danger of spilling or excess weight. The complete outfit includes seven intricately molded parts—battery jar, jar top, top cover, two non-spilling devices, and two filler plugs. All parts are molded of polystyrene which has a high dielectric strength and smooth polished surface. With the exception of the jar top, which is black or green, all parts are transparent, enabling the user to see at a glance when the battery needs to be refilled. Extremely close tolerances were held throughout so that there would be no leakage after the parts were

Nutting
"Free Wheeling"
Rubber-Tired
WHEELS



R K Type Heavy Duty Demountable

Tire changing is easy with this wheel. When you need new ones, put them on yourself, —no delay. Semi-Steel rims bolt against V-shaped base of tire. Tire has thick tread of tough, resilient rubber, and base reinforced with two continuous braided wire cables. Will not stretch off wheel, loosen, creep or break.

Nutting "Free Wheeling" Rubber Tires start and run easier than metal wheels, reduce vibration. They are quiet, long wearing, do not mar floors. Wide range of sizes to fit almost any truck or caster. **They save you money!**

Nutting makes everything in floor trucks, wheels, casters. Write for Bulletin 41-G. Representatives in principal cities. Consult your classified phone directory, or write direct to



RK Wheel with Hub Guard
Protects bearings from dust, prevents damage by axle ends or greasy hubs.

NUTTING TRUCK & CASTER CO.
1852 Division St. Faribault, Minnesota

FLOOR TRUCK LEADERSHIP SINCE 1891





★ More machines—more skilled help—more production facilities. The picture at Central Screw Company grows busier and bigger with the swelling tide of defense.

Certainly, defense orders for Screws—Bolts—Nuts—Rivets and Special Fastening Devices are getting preferred attention. But, as this message goes to press, Central Screw production is gaining momentum fast.

Thus, you can expect earlier delivery schedules, not only for defense requirements but for civilian demands as well, when you send your orders to Central.

CENTRAL SCREW COMPANY

3515 SHIELDS AVENUE

CHICAGO, ILLINOIS



Christmas Gifts

FOR CUSTOMERS
OFFICIALS AND EMPLOYEES

L. & C. MAYERS CO.

ESTABLISHED 29 YEARS

IMPORTERS • MANUFACTURERS • DISTRIBUTORS

545 FIFTH AVENUE, NEW YORK

170 BROADWAY, NEW YORK

ALSO PHILADELPHIA • BUFFALO

ALBANY • HARTFORD

Now when speed is so vital



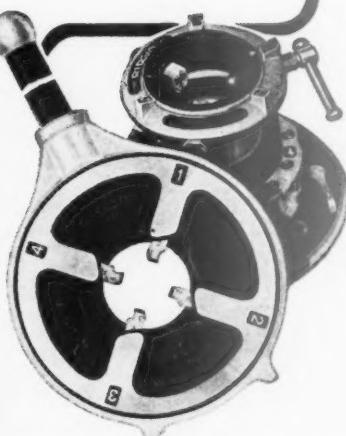
You can set this Work-Saver **RIDGID**

No. 65R to thread

1" 1¼" 1½" or 2" pipe

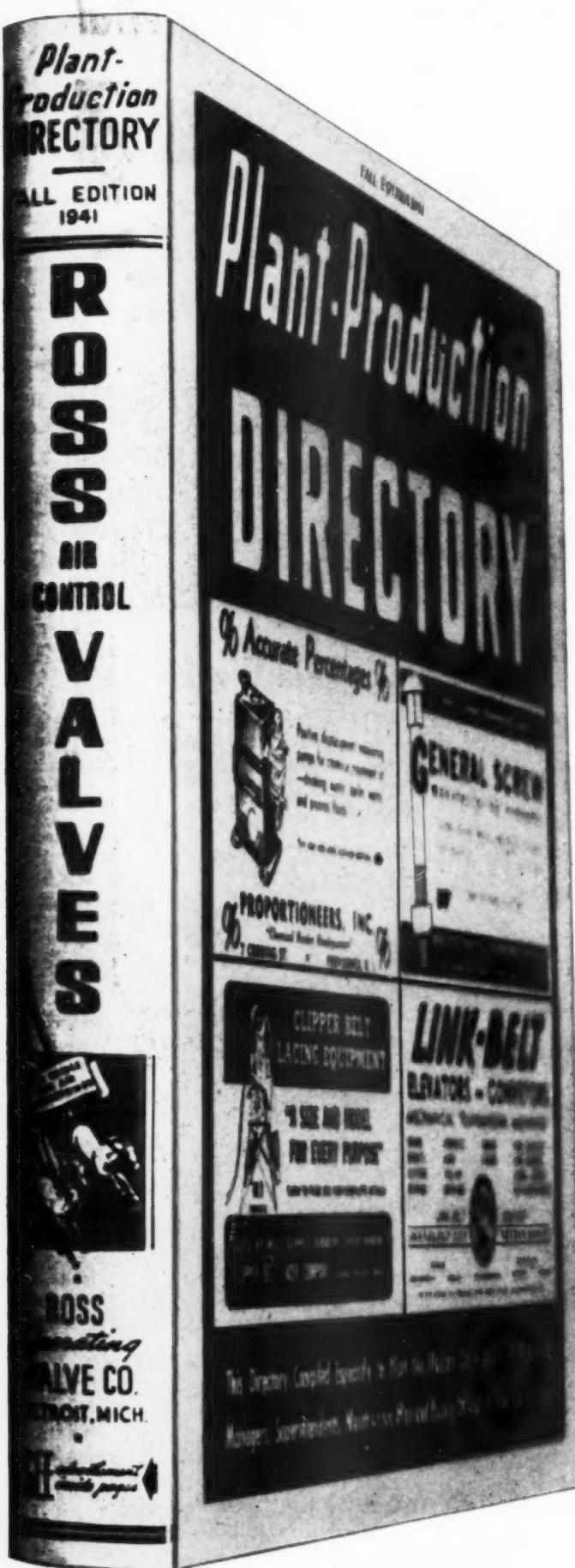
in 10 seconds!

SPIN UP workholder, set cam post to pipe size, spin it down—turn workholder cam plate to size—put on the pipe, tighten one screw—and start threading! You won't believe how fast and easy till you have tried it—a real saver of precious time and effort. Dependable? This fully tested all-steel and malleable-alloy tool, with drop-forged tool steel cam plates and high speed steel chaser dies, does all you can ask of it—more smooth accurate threads on any pipe in less time than you've ever been able to cut before. Hundreds of thousands in use. Try this **RIDGID** No. 65 at your Supply House—today!



THE RIDGE TOOL COMPANY, ELYRIA, OHIO





"THE GREATEST ASSET IN OUR PLANT"

That's the description given PLANT-PRODUCTION DIRECTORY by one of the 12,500 industrialists who received the Fall Edition. Each day similar statements are received from industrial executives all over the United States because this directory provides complete information on sources of supply for all industrial equipment, products and supplies.

Plant-Production Directory

is an innovation in directory publishing. Although still complete in every detail, the publishers, through painstaking effort, have eliminated unnecessary and duplicated classifications—thus reducing the weight to a total of six pounds.

That's why, hundreds of letters have come in to us stating that PLANT-PRODUCTION DIRECTORY has replaced other directories formerly used.

You Now Can Find What You Are Looking For in a Fraction of the Time

The new high-speed four-column page and easy-to-read typographical construction of Plant-Production Directory helps you find the proper classification in a jiffy! There are no unnecessary listings or advertisements of manufacturers under cross references to confuse you. Cross references that do appear in Plant-Production Directory direct you to the listing that experience indicates, is the most universal descriptive term.

A few copies of the Fall edition of PLANT-PRODUCTION DIRECTORY will be available for those who failed to receive either the Spring edition—or the Fall edition. Write us—and we will do our utmost to take care of all requests.

Plant-Production DIRECTORY

333 N. Michigan Ave., Chicago; 205 E. 42nd Street,
New York; Leader Building, Cleveland

A Conover-Mast Publication

Sources of supply found quicker and easier with PLANT-PRODUCTION DIRECTORY

assembled. Having a specific gravity of about 1.06, the molded parts are very light in weight, which was essential in this application.

The Columbian Rope Company was an industrial prize winner with its Co-Ro-Felt Pad and Co-Ro-Lite Bobbin and Bobbin Head. The pad is used as a backing for an abrasive coated sanding disc mounted on a portable sanding machine. Two different bonding materials are used in a continuous unit, using the same heat and pressure in the mold. The center, or hub, consists of vegetable fibers impregnated with a thermosetting resin. The outer section has vegetable fibers impregnated with a compounded latex. This results in a rigid hub center and a resilient, flexible outer circular section. Before molding the fiber, portions are assembled in an overlapping arrangement, and the bonds are, in a sense, fused under the heat and pressure, further strengthened by the mechanical interlocking of the materials by overlapping. Important point to this preform is the design and dimensions of the laminations when assembled for molding.

The plastic bobbin replaces a wood product. It is made of vegetable fiber and Durez phenolic, closely resembling wood and corresponding to hard maple in weight, density, and porosity. Furthermore, it has non-fracturing qualities when dropped or subjected to sudden shocks.

A revolutionary new storage battery for use in portable radio sets, developed by the Willard Storage Battery Co., was another industrial award winner. Two important factors considered in this product were its ability to stand hard knocks, and ease of servicing the battery without specialized knowledge. Transparent polystyrene makes possible a quick check on the electrolyte level, and by cementing the top with polystyrene

INCREASE production from Belts

CLING-SURFACE Belt Treatment saves you hard cash, makes all belts do more work!

- 1. Cling-Surface Belt Treatment is usable on all types of belts—leather, rubber, rope, hair, cotton, flat or "V".
- 2. Preserves—waterproofs—lubricates—in one operation.
- 3. Belts operate slack without slip after first treatment.
- 4. Penetrates pores of belt, never dries out.
- 5. Made by oldest and largest exclusive liquid belt treatment manufacturers in the U. S. A. Write for free trial: Cling-Surface Co., 1018 Niagara Street, Buffalo, N. Y.

→ SINCE 1896 THE BELT TREATMENT WORLD-OVER
CLING-SURFACE

When writing advertisers please mention Purchasing

It Pays to Use

THESE MODERN DESIGN TAKE-UPS



• Made in numerous types in a wide range of shaft sizes and bearing movements—for installation in any desired position, upon any suitable support.

Made with steel frames; combining unusual strength and light weight. Some employ babbitted bearings, while others use Link-Belt Friction Fighter Bearings which require only infrequent lubrication and provide highest operating efficiency.

They are all modernly designed for dependable, low-cost service.

LINK-BELT COMPANY, Chicago, Indianapolis, Philadelphia, Atlanta, Dallas, San Francisco, Detroit, Boston, Los Angeles, Seattle, Portland, Ore., Toronto. Other Offices and Distributors in Principal Cities.



LINK-BELT TAKE-UPS

A TYPE FOR EVERY SERVICE

Manufacturer of

STEEL STRAPPING

Nailless
Nailed On
Car Banding

STRAPPING TOOLS



THE STANLEY WORKS

Steel Strapping Division
New Britain, Conn.



TRADE MARK



"HERE'S THE FASTEST WAY TO GET YOUR RUSH ORDERS!"

... says S. F. Heinritz,
Editor of Purchasing

Pressure on manufacturers everywhere often makes it hard to get important orders as quickly as you need them. What can you do about it? Just this: specify shipment by AIR EXPRESS — for machine parts, heavy equipment, samples or anything else a plane can carry — and save hours and days through 3-mile-a-minute sky-speed!

AIR EXPRESS wings directly between over 370 key cities. Fast air-rail connections to 23,000 off-airline points. Special pick-up and special delivery at no extra charge within regular RAILWAY EXPRESS vehicle limits in all cities and principal towns. International AIR EXPRESS to and from Canada, Latin America, Bermuda, Alaska, Hawaii, Australasia, the Philippines and Far East. Phone RAILWAY EXPRESS, AIR EXPRESS DIVISION.



CHRISTMAS GIFTS—To add an extra thrill to gifts, send them swiftly, safely by AIR EXPRESS. Special handling all the way.

'FASTEST WAY' MEANS AIR EXPRESS

AIR RAILWAY EXPRESS AGENCY INC. **EXPRESS**
Division of **RAILWAY EXPRESS**

When writing advertisers please mention Purchasing

in solution, virtually a one-piece container is secured. A simplified charge indicator is incorporated by floating three different colored balls in the container, constantly and clearly indicating the relative state of the battery charge. The non-wetting surface of the material is another advantage, since the liquid will not spread on the surface or creep along the side of the container and escape through the vent hole.

The battery provides both A and B power, the former direct, and the latter by means of a vibrator conversion. A safe, clean, silent charger built into the receiver itself permits recharging by simply plugging into an AC electric socket, while the set is being operated or is idle. Overall measurements are 4x3x5½ inches.

General Electric Company's Ratio Adjuster for Power Transformer, which won an honorable mention, again proved the efficacy of plastics in the field of insulation. Several major problems of design were solved by the use of plastics. The contact rods are held rigidly and accurately in place, and at the same time are highly insulated from each other, by means of circular heads molded from a mechanically strong, high dielectric grade of Textolite. Short paper sleeves are molded into the openings, and a bronze bushing is molded as an insert in each head to provide a good mechanical bearing for the rotating shaft.

Another plastic part in this assembly consists of a molded member incorporating an activating arm, providing high insulation value in a part that must stand up under the strain of thousands of mechanical movements. In addition to these essential properties, the use of plastics results in a unit more compact than previous types, with lower fabricating, assembly and maintenance costs.



*Wherever there's a telephone . . . there's
Postal Telegraph!

For extra convenience, extra speed, extra care *at no extra cost*—next time you have important telegrams to send—

Phone * **Postal Telegraph**

Exact Weight Scales



Solve Labor Shortage . . .

Defense requirements are demanding more and more materials . . . more and more man power. Labor shortage is already acute in many districts. Meet your sacking problem with better equipment. New EXACT WEIGHT Sacking Scales have dustite bag holders, lockjaw grips, expanders for changing from 100 lb. to 200 lb. bags, main valves for hoppers. Get the details today.

MODEL
2225

The
Exact Weight
Scale Company

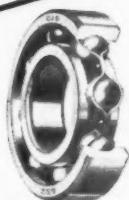
211 W. Fifth Ave., Columbus, Ohio



THERE IS NO SUBSTITUTE FOR EXACT WEIGHT
INDUSTRIAL
PRECISION SCALES

C J B
AHLBERG

THANKS for your
Patience and Cooperation



Manufacturing Ball Bearings for gun mounts—tanks—army trucks, etc., all of which carry high preference ratings, is the reason we are behind on deliveries of bearings for other uses.

AHLBERG
BEARING COMPANY

★ 3039 WEST 47th STREET • CHICAGO, ILL. ★

When writing advertisers please mention Purchasing

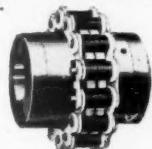
Are you using the RIGHT COUPLING?



Type "A" is made on the double slider principle for low speeds and heavy torque.



Type "B" is made specifically for moderate shock loads and noiseless operation.



Type "RC" has great flexibility of design for meeting special conditions. Easy to install, efficient in service.



Ribbed compression couplings are split, and can be easily installed or removed from shafts in place.

LINK-BELT COMPANY
Chicago, Indianapolis, Philadelphia, Atlanta,
Dallas, San Francisco, Toronto 8460B



Flanged face couplings are made of cast iron and finished all over for proper balance. Many sizes.



Keyless compression couplings afford a simple means for the keyless connection of abutting shafts of standard diameter tolerances, on light-duty applications.

**LINK-BELT
COUPLINGS**



**IN A HURRY
FOR SPROCKETS?**

CALL CULLMAN

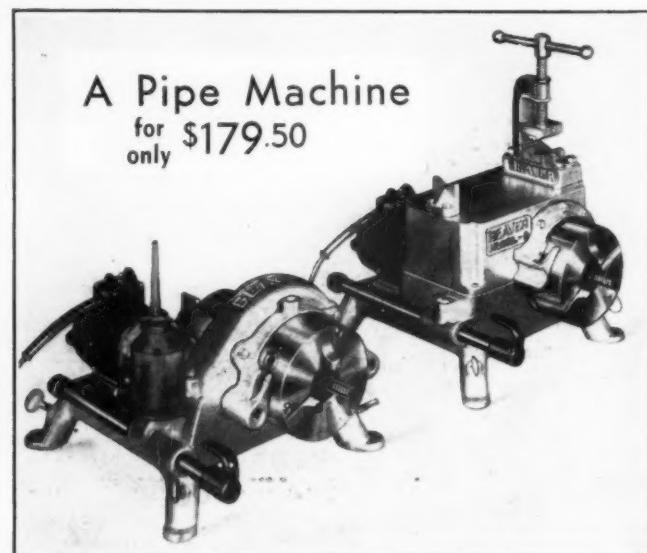
Over 45,000 accurately made sprockets in stock for immediate shipment. Special sprockets made to order.

Write for catalog

CULLMAN WHEEL CO.

342 Altgeld St.

Chicago, Ill.



Beaver Model C-1 Power Unit, with Beaver No. 5, $\frac{1}{2}$ to 2-inch automatic square-end pipe cutter, and Beaver No. 72, $\frac{1}{2}$ to 2-inch adjustable pipe threader, makes a fast, powerful, dependable, economical and highly efficient pipe machine—for only \$179.50. With drive shaft it will operate geared cutters and threaders up to 8-inch—threading 8-inch pipe in six minutes. Thousands in use in the best shops throughout the country. Write for Catalog C.



Just as machine gears mesh to pull tremendous loads, so SAFETEX GUMMED TAPE with the "Herringbone" glue surface grips the shipping container. GRIPS and HOLDS . . . proof against slipping or skidding. SAFETEX GUMMED TAPE is insurance against shipment loss or damage.

CENTRAL PAPER CO. Menasha, Wis.



SAFETEX
HERRINGBONE GUMMED
TAPE

When writing advertisers please mention Purchasing

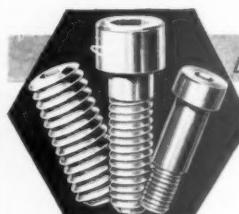
MASS PRODUCTION OF TANKS

An Army tank contains more than 30,000 parts, as contrasted with the average 15,000 parts in an automobile. This does not include armor plate, cannon, machine guns, or the 400-horsepower Wright Whirlwind motor, all of which are supplied by the Government for installation. The Chrysler tank arsenal at Detroit, largest in the world, obtains parts from more than 700 suppliers scattered over 20 states, though about 400 of these suppliers are concentrated in the Detroit and Michigan automotive areas. This plant has been used as the model for the entire program of tank production, being designed and operated as an assembly plant, using the automotive method of straight-line production from a flow of parts coming from subcontractors.

ACTIVE FOREIGN TRADE

• The Department of Commerce announces that our foreign trade for the fiscal year ending June 30th amounted to 4,050 million dollars for exported goods and 2,925 million dollars for imported goods, the highest totals recorded for any fiscal period in the past ten years.

Exports of metals and manufactures, including aircraft, heavy iron and steel, metal working machinery, non-ferrous metals, munitions and chemical products, made up 41% of the total export trade in the first half of 1941. An outstanding development of recent months has been the increase in shipments of foodstuffs.



ALLEN HOLLOW SCREWS

FOR YOUR EVERY REQUIREMENT in Hollow Screws and Hexagon Hole Products,—a complete line 30 years in the making by hollow screw Specialists. Made of special-analysis alloy steel (ALLENOY), heat-treated for balanced hardness and toughness. These screws lock parts together with a rigidity that defies vibration.

Thread accuracy has been brought to perfection with Allen-developed lead screw threading machines and the new "Duo-process". Sockets are true, clean, accurately centered. Screws are instrument-tested for each physical property besides being visually and manually inspected. Full technical data in Folder GP-21,—yours on request.

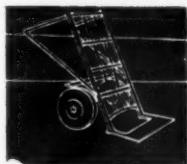
Call your local Allen Distributor for free samples and accommodating service.
THE ALLEN MFG. COMPANY, HARTFORD, CONN., U.S.A.

REDUCE THE OVERHEAD
THAT IS UNDERFOOT!



USERS OF DARNELL CASTERS and allied products are saving money daily! Saving floors and floor coverings, tool! Made of finest materials, Darnell products give a long life of trouble-free service.

Darnell Corp., Ltd.
LONG BEACH, CALIFORNIA
36 N. CLINTON ST., CHICAGO
60 WALKER ST., NEW YORK CITY



BRING
DEPARTMENTS
TOGETHER



by Equipping With
FASTER • QUIETER • SAFER
RUBBER TIRED WHEELS

All Sizes and
Types including
SOLID
RUBBER
SEMI and **FULL**
PNEUMATIC
TIRED
for
TRUCKS.
CARTS
AND
PORTABLE
EQUIPMENT

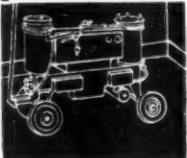


Every aid to production
is worth while, particularly
when the investment is
SMALL and the benefits
CONSIDERABLE.

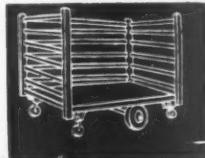
When you follow the lead
of thousands of plants and equip your
trucks, carts and barrows with French & Hecht
rubber tired wheels, you've
speeded production, lessened foot accidents,
cut down unnecessary noise and
protected both floors and fragiles.

French & Hecht wheels are available
in every size and type for the
requirements of industry. Complete
descriptions and prices, and engineering
advice, are yours for the asking.

Write Today for Catalog and Price List.



FRENCH & HECHT,
INC.
412 Farnam
Davenport, Iowa
•
WHEEL BUILDERS
SINCE 1888



Pat'd. and Pat's. Pend.
Fig. 732
Drawer is extra.



Fig. 1117
Pat'd and
Pat's. Pending.
All laminated wood top.
Drawer is extra.
Footrest below.

HOLLOWELL STEEL BENCHES

HAVE THE THREE "ILITIES"

Durability

It's a famous "Hallowell" characteristic. You'll find no skimping of steel for the sake of cheapness. And, there are many exclusive refinements in design and construction that lift "Hallowell" far above the ordinary steel bench class... refinements that insure such permanent rigidity that bolting to the floor is unnecessary. You'll want details. Write

Utility

For quick expansion economically... for meeting any or all of your bench requirements "Hallowell" has the features you want. Providing a smooth, working surface of steel, laminated wood or Masonite (as you wish) these benches are popular in every corner of the shop. There are more than 1300 stock styles and models available at order-inviting prices. Now's the time to write

Versatility

Shop to be re-arranged? If there are crowded spots to get through just remove the nuts and bolts—take the bench apart—move—and set up again where needed. It's quick and easy. In addition, "Hallowell" standardized construction permits easy interchangeability of shelf, cabinet and drawer units to meet your special requirements. Complete details are yours free on request. Just write

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. 36x500

BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO



LINK-BELT TWIN-DISC FRICTION CLUTCHES

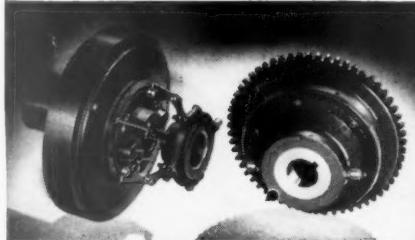
deliver more service with less servicing—and on those rare occasions when they need attention, it's easily given. Compact design, permits carrying heavy loads in small space. Generous size and accurate grinding of friction discs, back plates and floating plates give smooth action, permit gradual pickup, and positive engagement with no power loss. Adjustments are made from one point, without tools. Even relining is done without removing entire clutch from shaft.

Link-Belt Twin-Disc Friction Clutches are available for normal, heavy or extra heavy duty, sizes from $5\frac{1}{2}$ " to 42 " diameter, rated at $1\frac{1}{4}$ -H.P. to 350-H.P. at 100 R.P.M.

LINK - BELT COMPANY

Chicago, Indianapolis, Dallas,
Philadelphia, Atlanta,
San Francisco, Toronto.
Offices, warehouses
and distributors in
principal cities.

8701-A



Get full details in
Catalog 800. It contains
engineering data, dimensions
and list prices on
Link-Belt Friction
Clutches

**COOK'S
SHEET METAL
SPECIALTIES**

MEET EVERY DEFENSE REQUIREMENT •

EXAMPLES OF PRECISION PROGRESSIVE DIE WORK

Send Us Your Sub-Contract Jobs

COOK has ample modern facilities for partial or complete production of high grade, light sheet metal stampings—also for plating, baking, enameling and assembling.

Shown above are various examples of progressive notching, trimming, bumping, parting and forming—all done to precision standards. Don't "bottle neck" your schedules because of slow moving sheet metal parts. Send us your blue prints and we'll quote promptly. High production speed assured.

THE H. C. COOK COMPANY
15 BEAVER ST., ANSONIA, CONN.

MAKERS OF THE NATIONALLY KNOWN →

Gem Nail Clippers



Orange Core Sealing Tape is proving its worth in America's defense program. Its superiority in speedy adhesion and rugged strength is saving time, waste and money in the shipment of defense material. Orange Core quality is helping to step up the pace of production and make safe deliveries more certain-sure. Today, more than ever, this top-flight sealing tape is proving why it has earned the distinction of being

"America's Best-Selling Brand."

ORANGE CORE
Sealing Tape

Moore & Thompson • Div. Hudson Pulp & Paper Corp. • 220 E. 42nd St. N. Y. C.

INTERIOR DEPARTMENT POLICY ON IDENTICAL BIDS

- Secretary Harold L. Ickes has announced that the bidder closest to the site will receive future contracts from the Department of the Interior in those cases where identical bids are received. This is a reversal of previous policy, and has been adopted as a means of reducing to a minimum the transportation requirements in connection with purchased materials, thus easing the burden placed on transportation facilities by defense demands.

Several years ago, as part of an unremitting campaign against the practice of identical bidding, Secretary Ickes instructed all Interior agencies to award contracts, when identical bids were received, to the shipper farthest removed from the delivery point. That policy tended to penalize the identical bidders through increasing the cost of delivery to be borne by the successful supplier. The railroads, at least, were thus enabled to benefit at the expense of the identical bidders, although the Government itself received no advantage from its policy of offering its work and purchases on a free and presumably competitive market. Present transportation requirements make a continuance of that policy no longer in the national interest.

Award of the contract to the nearest bidder is expected to serve perhaps equally well in making the practice of identical bidding unsavory to the manufacturers who indulge in the practice. A certain segment of the bidders will know in each instance that the practice will serve automatically to give the business to their rivals (since those who bid identically are more accurately described as "rivals" rather than as "competitors").

DANDUX

America's Finest Canvas Products Have Borne This Name For Twenty-Five Years

"Dandux Canvas Products are of superior quality of material . . . they last longer," states a large user of canvas goods. And his words might be as fairly applied to every one of our canvas products, which range from cotton ducks of all types by the yard to more than a thousand finished products! Let us help you on your canvas requirements, regardless of their nature. Write or phone to our nearest office for descriptive folder No. P-1, sent free upon request.

C. R. DANIELS, INC.
101 Crosby Street
Boston, Chicago, Cleveland, Detroit, Newark, Philadelphia, Pittsburgh, Alberton, Md., Buffalo, Hartford, Milwaukee

KRON •
Dial Scales

FOR INDUSTRY'S EVERY NEED

THE KRON CO.
BRIDGEPORT CONN.



Beware of "Bottle Necks"!

In these high speed, assembly line days, failure of a single small part in a Defense item can stop the entire production . . . and this often happens when a manufacturer tries to set up for parts obtainable cheaper and faster from specialists.

If you need screw machine parts up to 1 1/4" in steel and non-ferrous, especially aluminum, we will furnish them promptly and economically and guarantee their quality. Send us your specifications.

THE NEWTON MFG. CO., 11 Riverside Ave., Plainville, Conn.

NEWTON
SCREW MACHINE PARTS
(SEPARATE OR ASSEMBLED)



Let Roper Pumps eliminate your pumping worries . . . from the hundreds of different standard Roper Pumps available you can select practically a custom-built pump to handle your particular job with the highest degree of efficiency and at the lowest cost. Eight series of pumps with capacities ranging from one to 1000 gallons per minute, pressures up to 1000 pounds per square inch, speeds up to 1800 r.p.m., 21 drives and mountings, and 8 piping arrangements. Roper Hydraulically Balanced Pumps are tops in performance . . . low in cost.

Our catalog No. 937 is ready for you—write today.

GEO. D. ROPER CORP., ROCKFORD, ILL.

ROPER *Rotary* **PUMPS**

SPOT CARS
Quicker—at Less Cost



ONE MAN
with a
LINK-BELT
CAR SPOTTER

can do the work of a switch engine, at a moment's notice. End delays, cut costs and speed up your shipments with this inexpensive, powerful unit. Capacities one to six cars. Savings pay full cost of the car spotter in short period. Proved in scores of plants, it will work out for you, too!

LINK-BELT COMPANY
307 N. MICHIGAN AVE., CHICAGO, ILLINOIS

**WE'RE TACKLING
OUR JOB THE
"Progressive" WAY**

As manufacturers of special headed and threaded metal fastenings — so urgently needed in holding together the implements of war and the machines and tools that make them — our first obligation is to serve the interests of the defense program.

But in spite of an avalanche of orders that must be given preference because of priority ratings, we again say to our regular civilian customers, "We do not forget our obligations to you." By stepping up man hours, by installing new machinery, by squeezing the utmost out of every hour of every day, PROGRESSIVE is striving to make deliveries in response not merely to war demands but to the call of non-defense industry as well.

The PROGRESSIVE MFG. CO.
TORRINGTON, CONNECTICUT

Advertisers IN THIS ISSUE

Ace Fastener Corporation	116
Ahlberg Bearing Co.	155
Alemite Division, Stewart-Warner Corp.	149
Allen Mfg. Co. The	156
American Cable Division, American Chain & Cable Co., Inc.	32
American Chain & Cable Company,	32, 74, 104,
American Felt Company	144
American Screw Company	21
Ames Bag Machine Co.	140
Anchor Post Fence Co.	82
Apex Machine & Tool Company, The	20
Armstrong Blum Mfg. Co.	126
Armstrong-Bray & Co.	106
Armstrong Bros. Tool Co.	106
Armstrong Cork Co.	123
Bakelite Corporation	9
Bassick Company, The	132
Bausch & Lomb Optical Co.	110
Beaver Pipe Tools, Inc.	156
Bethlehem Steel Company	105
Black & Decker Mfg. Co., The	131
Blaw-Knox Division of Blaw-Knox Company	97
Briggs & Stratton Corp.	80
Bristol Company, The	21, 28, 29
Brown & Sharpe Mfg. Co.	85
Bunting Brass & Bronze Co., The ..	102
Central Paper Co.	156
Central Screw Company	21, 151
Century Electric Company	3
Champion Lamp Works, Division of Consolidated Electric Lamp Co.	96
Chandler Products Corporation	21
Chicago Wheel & Mfg. Co.	149
Chisholm-Moore Hoist Corporation —Division of Columbus-McKinnon Chain Corp.	22
Clemson Brothers, Inc.	136
Cleveland Cap Screw Company, The	162
Cleveland Twist Drill Co., The	67
Cling-Surface Co.	153
Clover Mfg. Co.	145
Columbia Ribbon & Carbon Manufacturing Co., Inc.	117
Commercial Paste Co., The	116
Commercial Solvents Corp.	138
Consolidated Electric Lamp Co., Champion Lamp Works Division.	96
Container Corporation of America	161
Continental Screw Co.	21, 92
Cook Company, The H. C.	158
Copper Range Co., C. G. Hussey & Co. Div.	78
Copperweld Steel Co.	89
Corbin Screw Corporation, The	21
C-O-Two Fire Equipment Co.	75
Crane Co.	119
Cullman Wheel Co.	155
Daniels, Inc., C. R.	158
Darnell Corp., Ltd.	156
DoAll Company, Inc., The	138
Dumore Co., The	95
Edison, Inc., Thomas A.—Storage Battery Division	99
Esleek Mfg. Co.	114
Exact Weight Scale Company	155
Fafnir Bearing Company, The	129
Fairbanks Company, The	143
Fairbanks, Morse & Co.	133
Firth-Sterling Steel Company	91
Flexible Steel Lacing Co.	147
Flexrock Company	130
Forest City Foundries Co., The	130
Frassé & Co., Inc., Peter A.	109
French & Hecht, Inc.	157
Galland-Henning Mfg. Co.	98
Garlock Packing Co., The	147
General Box Company	134
General Electric Company 13, 83, 86, 87	
General Electric Company, Mazda Lamp Division	5
General Industries Co., The	79
Graybar Electric Company	30
Grinnell Co., Inc. ....Inside Back Cover	
Guardian Electric Co.	132
Hammermill Paper Co.	115
Harper Company, The H. M.	140
Helmer-Staley, Inc.	143
Hewitt Rubber Corp.	135
Hinde & Dauch Co.	101
Holo-Krome Screw Corp., The	70
Howell Electric Motors Co.	94
Hudson Pulp & Paper Corp., Moore & Thompson Div.	158
Hussey & Co., C. G. Div. of Copper Range Co.	78
Ingersoll Steel & Disc Division, Borg-Warner Corp.	124
International Screw Company	21
Irvington Varnish & Insulator Co.	128
Jelliff Mfg. Co., C. O.	126
Jenkins Bros. ....Back Cover	
Keasbey & Mattison Company	125
Kimberly-Clark Corporation	121
Kirk & Blum Mfg. Co., The	73
Koh-I-Noor Pencil Co., Inc.	118
Kron Co., The	158
La Salle Steel Company	24, 25
Lamson & Sessions Company, The.	21
Lee Spring Co., Inc.	148
Link-Belt Company	153, 155, 157,
Lunkenheimer Co., The	159
Lyon Metal Products, Inc.	88
Macklin Company	107
Mavers Co., L. & C.	8
McLaurin-Jones Co.	151
Medart Manufacturing Co., Fred ..	148
Moore & Thompson Division, Hudson Pulp & Paper Corp.	144
Morton Salt Co.	158
National Screw & Mfg. Company	140
National Adhesives Div. of National Starch Products, Inc.	21
Nekoosa-Edwards Paper Co.	139
New England Screw Company	113
Newton Mfg. Co., The	21
Nicholson File Co.	159
Norton Company	11
Nutting Truck & Caster Co.	4
Oakite Products, Inc.	150
Old Town Carbon & Ribbon Company	124
Osborn Mfg. Co., The	112
Page Fence Association of Page Steel & Wire Div. of American Chain & Cable Company, Inc.	7
Page Steel & Wire Division of American Chain & Cable Company, Inc.	104
Parker Company, The Charles	146
Parker-Kalon Corp.	21, 81
Pawtucket Screw Company	21
Pheoll Manufacturing Company	21
Pittsburgh Coal Company	108
Plant Production Directory	152
Plymouth Cordage Company	140
Porter Co., H. K.	146
Postal Telegraph	154
Powers Regulator Co., The	150
Preformed Wire Rope	137
Progressive Mfg. Co., The	159
Pulmosan Safety Equipment Corp.	145
Pure Oil Company, The	108
Railway Express Agency, Inc., Air Express Division	154
Republic Steel Corp., Union Drawn Steel Division	26, 27
Rhinelander Paper Company	15
Ridge Tool Co., The	151
Roebling's Sons Co., John A.	84
Roper Corp., George D.	159
Russell, Burdall & Ward Bolt & Nut Company	21
Ryerson & Son, Inc., Joseph D.	34
Scott Paper Co.	77
Scovill Manufacturing Company .19, 21	
Scully Steel Products Company (United States Steel Corporation Subsidiary)	21
Select-O-Phone Co.	17
Seymour Mfg. Co., The	90
Shakeproof Lock Washer Company	134
Sheppard Co., The C. E.	21
Signode Steel Strapping Co.	114
Simonds Saw & Steel Co.	128
Simonds Worden White Co.	76
Sisalkraft Co., The	130
Smit and Sons, Inc., J. K.	93
Southington Hdwe. Mfg. Company, The	122
Standard Pressed Steel Co.	21
Stanley Tools, Division of the Stanley Works	157
Stanley Works, The Steel Strapping Division	127
Starrett Co., The L. S.	153
Steel Storage File Company, The	100
Synthane Corporation	116
Taylor Chain Co., S. G.	23
Taylor Forge & Pipe Works	136
Texas Company, The Inside Front Cover	
Timken Roller Bearing Company, The	18
Tube-Turns, Inc.	141
Union Drawn Steel Division, Republic Steel Corp.	69
United States Steel Corporation Subsidiary	27
Victor Saw Works, Inc.	17
Wagner Electric Corporation	143
Walworth Company	103
Waters & Waters Branch	6
Weldon Roberts Rubber Company	114
West Disinfecting Co.	118
Weston Company, Byron	72
Whitney Screw Corporation	117
Wieman & Ward Co., The	21
Witt Cornice Co., The	104
Youngstown Sheet & Tube Company, The	122
	71



packaging goes to extremes!

From wedding rings to mattresses—from foods to refrigerators—paperboard has proved the safe, economical and attractive packaging for a million things. To cut costs, decrease weight, increase protection, hundreds of articles are packed in paperboard as a result of Container Corporation's research and imagination. For this company is uniquely fitted for development. Our control of raw materials, paperboard manufacture and package fabrication in one organization allows a free choice of "the correct package for the job." Specialists in every phase of packaging strive for new, workable ideas. Plants and offices are located for first-class service and deliveries. How recently have you surveyed your product packing? A study by Container Corporation specialists may suggest innovations or improvements. Arrange a discussion at our nearest office.

CONTAINER CORPORATION OF AMERICA

Chicago, Ill., and 21 Other Strategically Located Cities

**Corrugated and Solid-Fibre Shipping Cases
Folding Cartons**

When writing Container Corporation of America please mention Purchasing

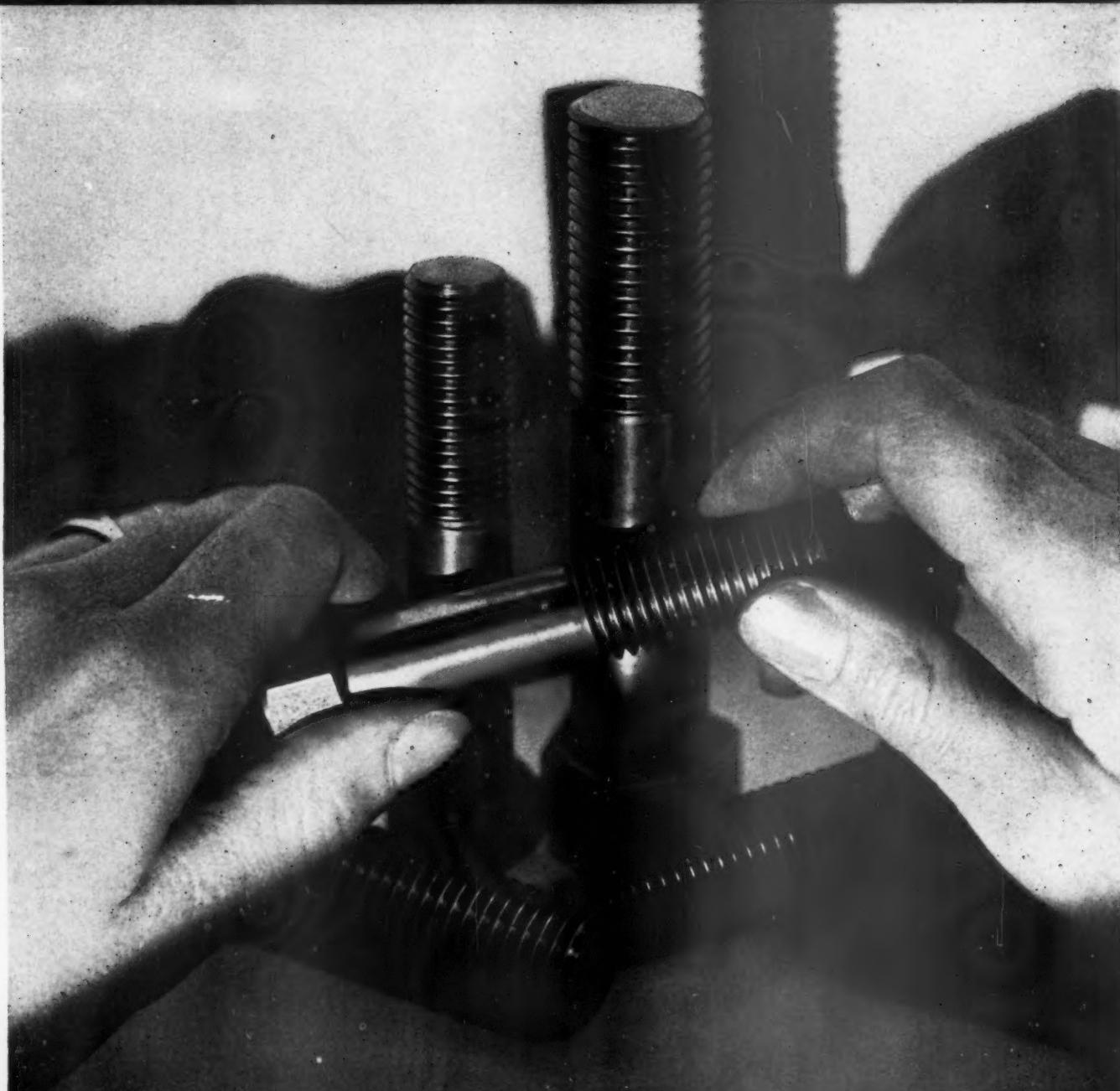
PURCHASING

M 11/24-20.

CLASS 3 FIT ★★ Our Standard

• Made by the Kaufman Process, our own plant development, you can be sure of proper thread fit when you specify Cleveland Cap and Set Screws.

THE CLEVELAND CAP SCREW CO., 2917 EAST 79th STREET, CLEVELAND, OHIO



BY THE BOX, OR BY THE MILLION... BUY

CLEVELAND CAP SCREWS

SET SCREWS • BOLTS AND NUTS

Address the Factory or our Nearest Warehouse: Chicago, 726 W. Washington Blvd. • Philadelphia, 12th & Olive Streets
New York, 47 Murray Street • Los Angeles, 1015 E. 16th Street

When writing The Cleveland Cap Screw Co. please mention Purchasing

